SLIDING/TILTING SUNROOF

TOOLS

Special tools, workshop equipment, testers, measuring instruments and auxiliary items required

- 3370 Special hook.

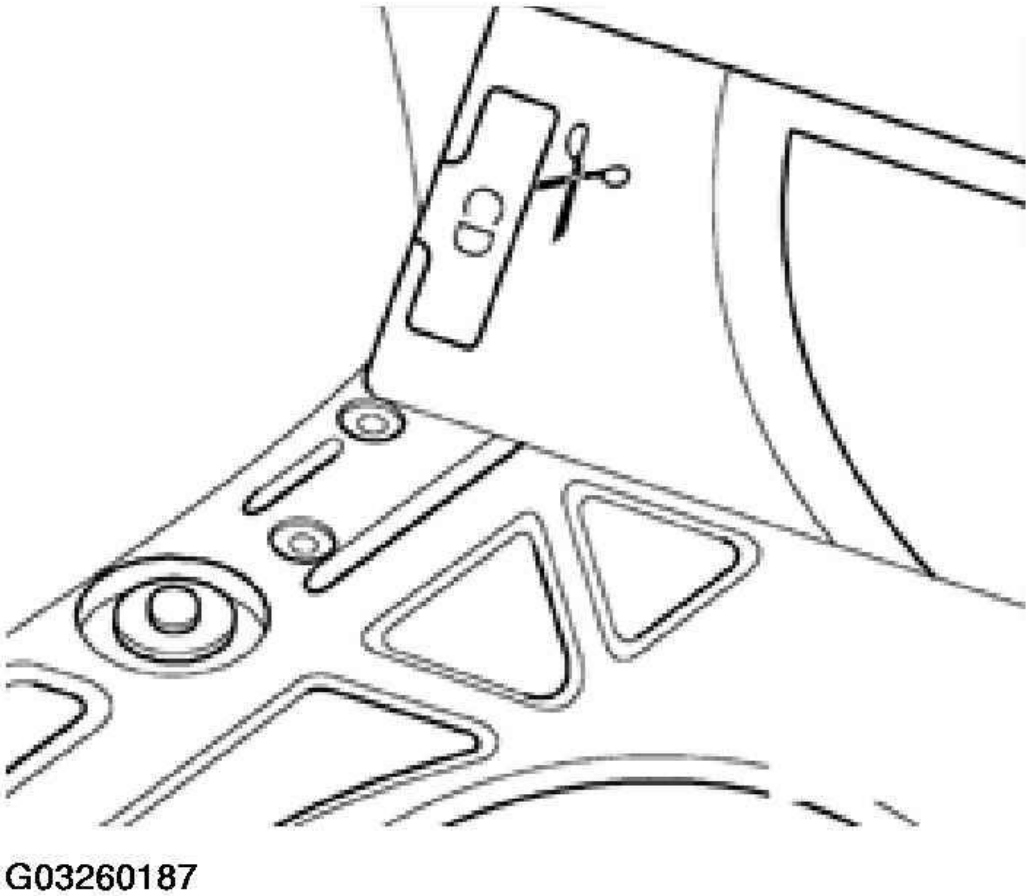


Fig. 1: Identifying Special Tools (3370 Special Hook)
Courtesy of VOLKSWAGEN OF AMERICA, INC.

FUNCTION

The sliding/tilting sunroof is opened and closed or tilted and closed using the rotary switch when the ignition is switched on.

After switching off ignition sliding/tilting sunroof can be opened or closed until either driver's or front passengers door is opened.

Rotary switch has markings for preset opening or tilting positions for glass sunroof panel. But any intermediate position for opening or tilting position can be selected by moving rotary switch in relevant direction.

Opening sliding/tilting sunroof to switch position -1-, comfort position, prevents wind noises which to a great extent would occur if opening fully to switch position -2-.

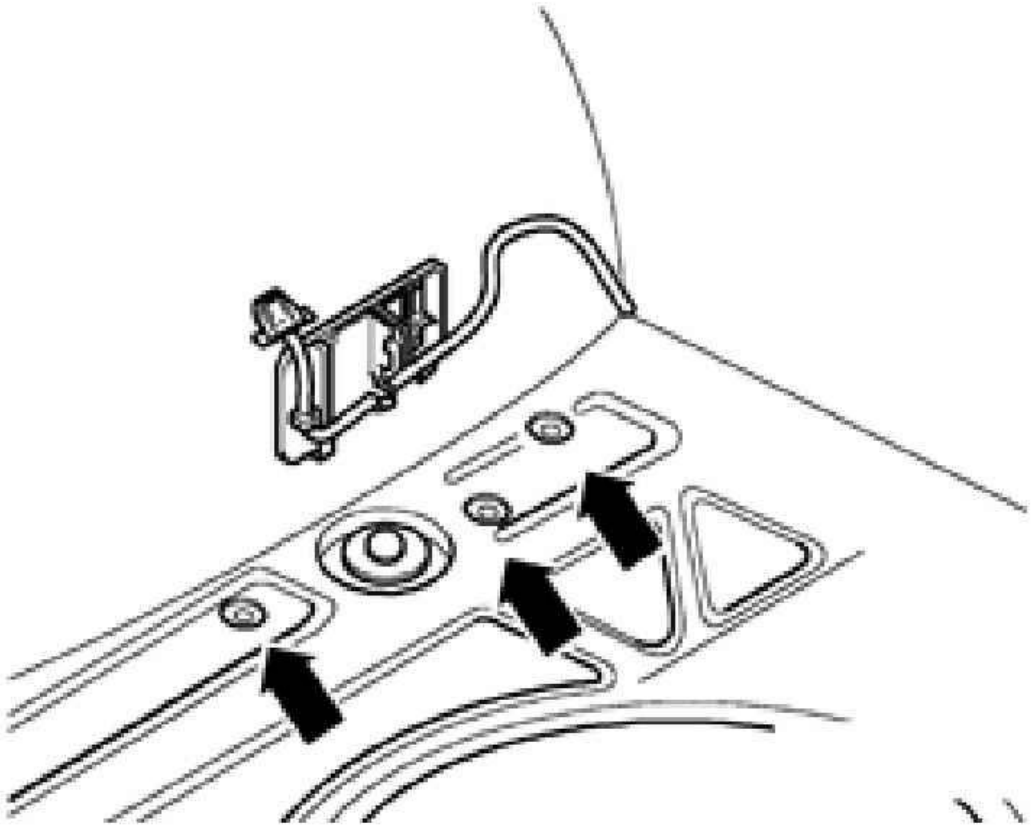


Fig. 2: Identifying Sunroof Switch Position
Courtesy of VOLKSWAGEN OF AMERICA, INC.

SLIDING/TILTING SUNROOF WITH GLASS PANEL, ASSEMBLY OVERVIEW

NOTE: The following list refers to items in Fig. 3 .

1. **Glass panel for sliding/tilting sunroof (single pane safety glass)**
   - Removing sliding/tilting sunroof glass panel, see **SLIDING/TILTING SUNROOF GLASS PANEL, REMOVING** .
   - Installing sliding/tilting sunroof glass panel, see **SLIDING/TILTING SUNROOF GLASS PANEL, INSTALLING** .
   - Adjusting sliding/tilting sunroof glass panel, see **SLIDING/TILTING SUNROOF GLASS PANEL, ADJUSTING HEIGHT** .
2. **Panel seal**
   - Adjusting panel seal, see **PANEL SEAL, ADJUSTING** .
   - Seal joint located centrally at rear.
   - Replacing panel seal, see **PANEL SEAL, REPLACING** .
3. **Sun blind**
   - Removing and installing sunblind, see **SUN BLIND, REMOVING** .
4. **Countersunk screws (micro-encapsulated)**
   - Always use new countersunk screws.
   - 3.5 N.m.
5. **Slide**
6. **Upper trim**
   - Removing, see **SLIDING/TILTING SUNROOF GLASS PANEL, REMOVING** .
7. **Lower trim**
   - Removing, see **SLIDING/TILTING SUNROOF GLASS PANEL, REMOVING** .
8. **Water channel**
   - Removed together with guide channel.
9. **Guide locking hook**
10. **End piece**
    - Use Butyl adhesive sealing cord AKL 450 005 05 to seal.
11. **Carrier unit**
    - Removing and installing carrier unit, see **CARRIER UNIT, REMOVING AND INSTALLING** .
    - If required, guide channels may only be greased with special grease G 000 450 02, otherwise correct operation cannot be guaranteed.
12. **Bolt/screw**
    - Qty. 3.
13. **Electric drive**
    - Removing, see **DRIVE FOR SLIDING/TILTING SUNROOF, REMOVING** .
    - Adjusting drive (zero position), see **DRIVE FOR SLIDING/TILTING SUNROOF ("0" POSITION), ADJUSTING** .
14. **Wind deflector**

- Removing, see **DRIVE FOR SLIDING/TILTING SUNROOF ("0" POSITION), ADJUSTING** .

15. **Spring**
16. **Torx(R) & screw**
    - Torx(R) key T25.
    - 4.5 N.m.
17. **Rear guide**
    - Removed together with guide channel.
18. **Guide channel**
    - Removing, see **GUIDE CHANNEL, REMOVING** .
19. **Distance piece**
    - Removed together with guide channel.

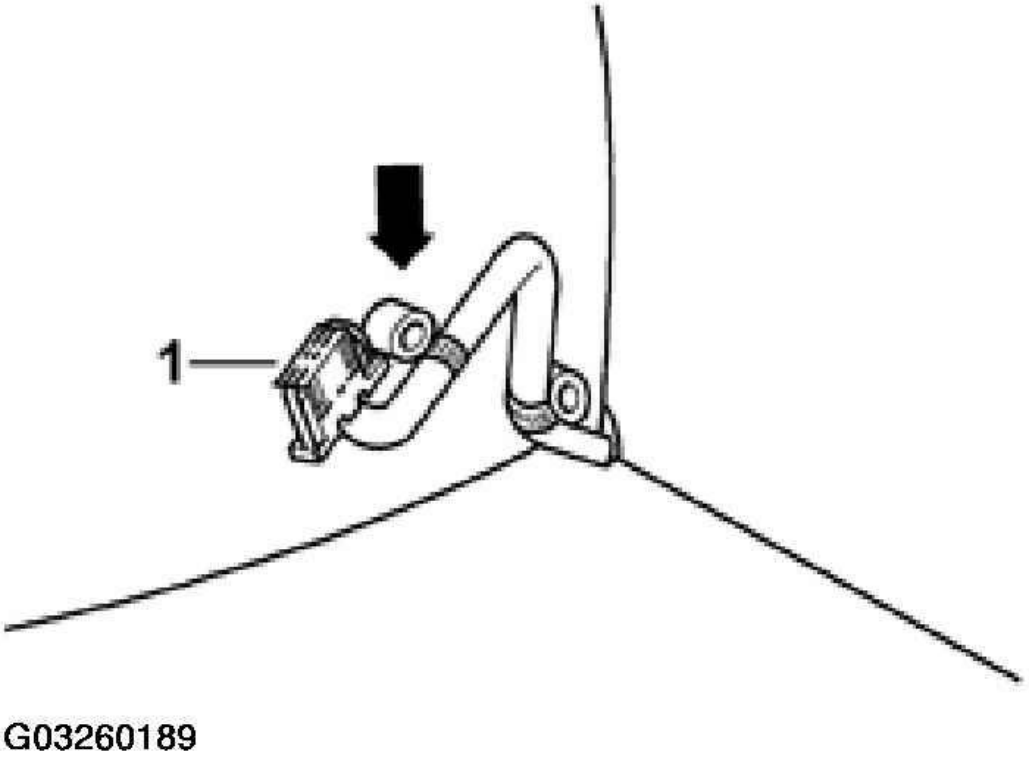


Fig. 3: Exploded View Of Sunroof
Courtesy of VOLKSWAGEN OF AMERICA, INC.

SLIDING/TILTING SUNROOF GLASS PANEL, REMOVING

- Slide sun blind to rear.
- Tilt (raise) sliding/tilting sunroof open
- Unclip lower trim -2- in forward area (working from outer side inward to center of vehicle) and unhook at rear.
- Unclip upper trim -1- at front, the center and unhook at rear.

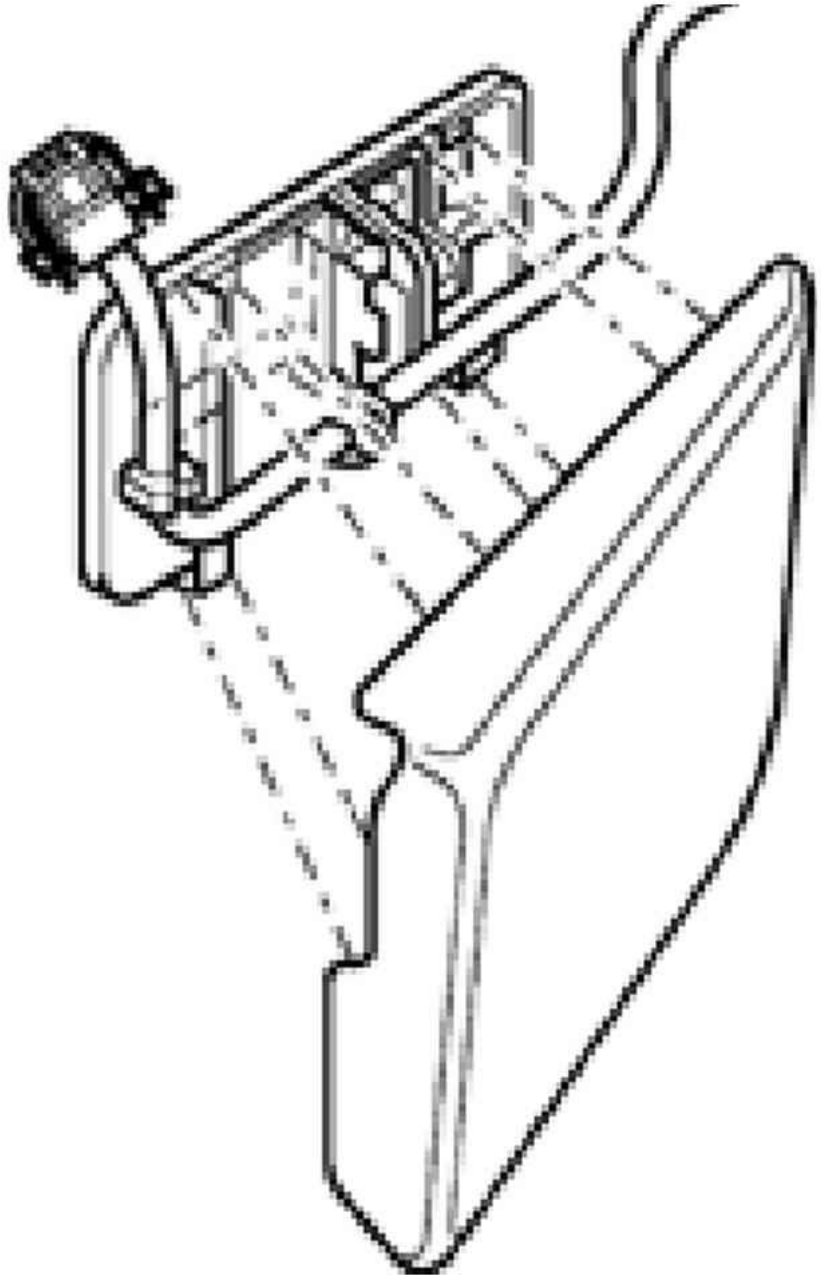


Fig. 4: Removing Lower Trim Clip In Forward Area
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Remove securing screws (Torx(R) insert T25; 4.5 N.m).

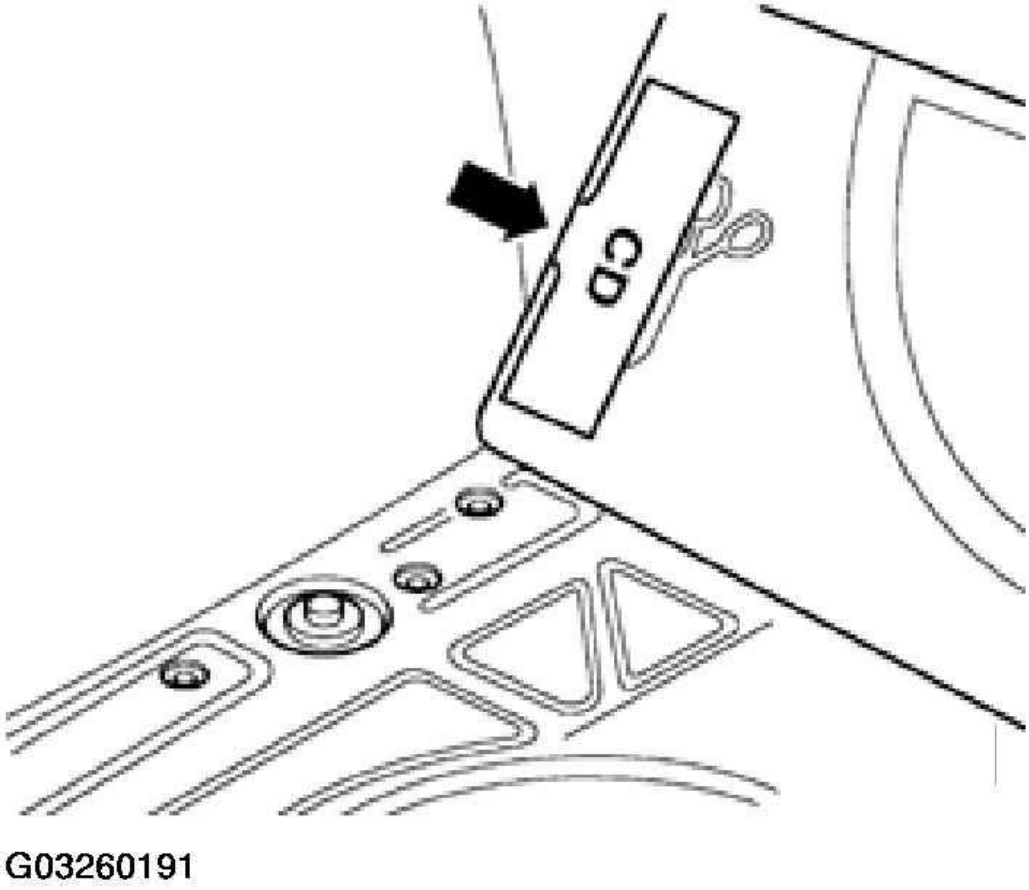


Fig. 5: Removing Sliding/Tilting Roof Panel Upward
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Remove sliding/tilting roof panel upward.

NOTE: The sliding/tilting sunroof must not be moved to position "Open" when glass panel is removed, this is because water channel will not be compressed by glass panel and can therefore may tilt in roof.

SLIDING/TILTING SUNROOF GLASS PANEL, INSTALLING

Panel must be installed in "0" position (panel closed).

"0" position:

The mark -arrow- on the rear of the guide upper part -1- must lie within the marks -dimension a- on the guide

rail gate -2-, on both sides.

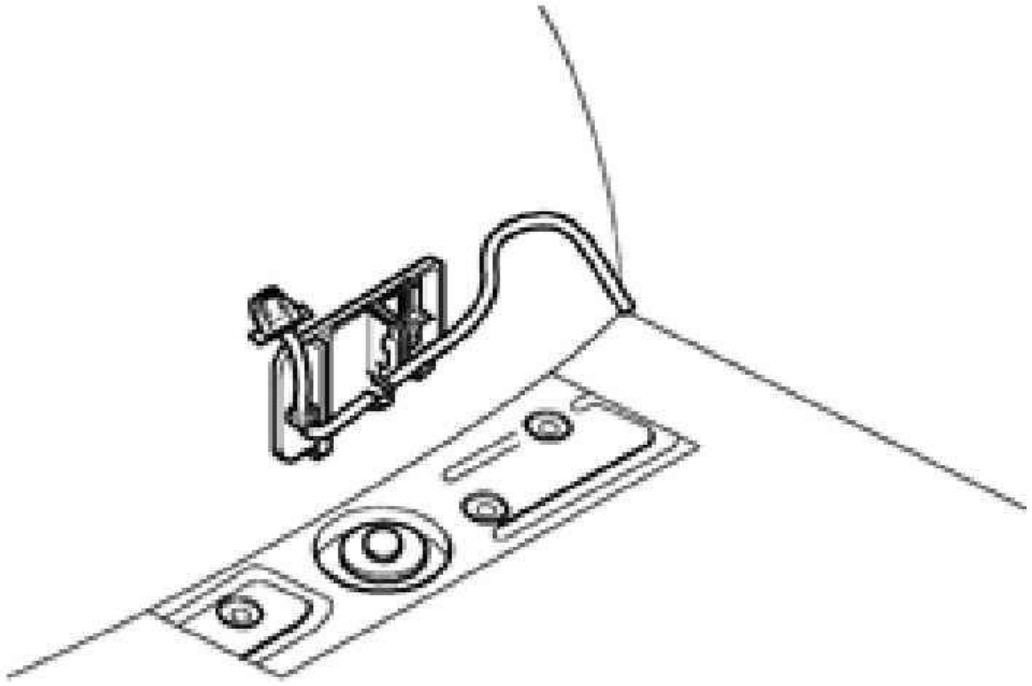


Fig. 6: Marking Dimension On Guide Rail Gate
Courtesy of VOLKSWAGEN OF AMERICA, INC.

The guide channel -2- must be located in the guide rails (cannot be moved by hand).

If this is not the case, adjust parallel running, see **PARALLEL RUNNING, ADJUSTING** .

- Place sliding/tilting sunroof panel in position from above and screw in securing screws (guide rail/panel).

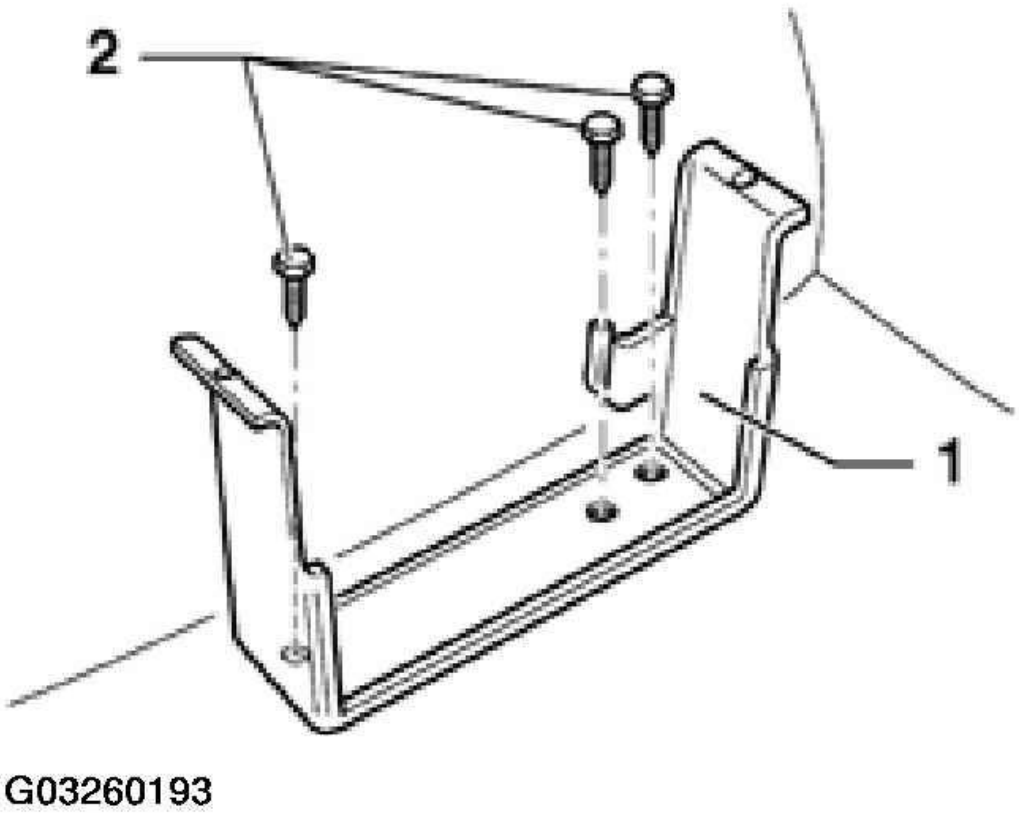


Fig. 7: Installing Sliding/Tilting Sunroof Panel
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Lightly tighten securing screws (Torx(R) T25).

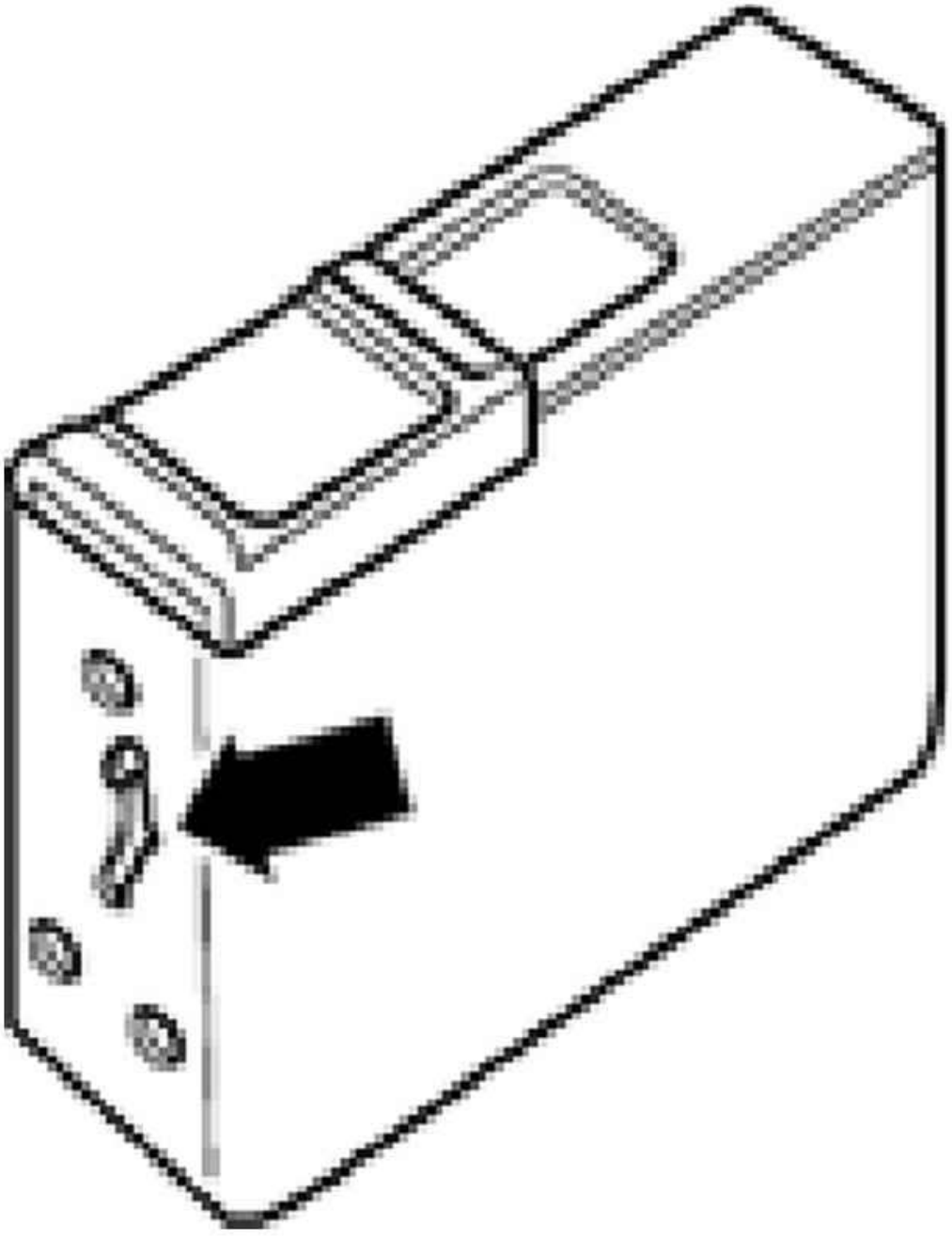
NOTE: After adjusting panel height tighten securing screws (4.5 N.m).

SLIDING/TILTING SUNROOF GLASS PANEL, ADJUSTING HEIGHT

Sliding/tilting sunroof "0" position OK.

- Tilt (raise) sliding/tilting sunroof open.
- Slide sun blind to rear.
- Unclip lower trim -2- in forward area (working from outer side inward to center of vehicle) and unhook at rear.
- Unclip upper trim -1- at front, the center and unhook at rear.

- Remove securing screws -3- (Torx(R) insert T25; 4.5 N.m).



G03260194

Fig. 8: Removing Lower Trim Clip In Forward Area
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Run glass panel to "closed" position.
- Carry out height adjustment of glass panel at front and rear on both sides as follows:

Panel adjustment front:

a = 0...1 mm lower than roof level.

-Arrow- = direction of travel (forward).

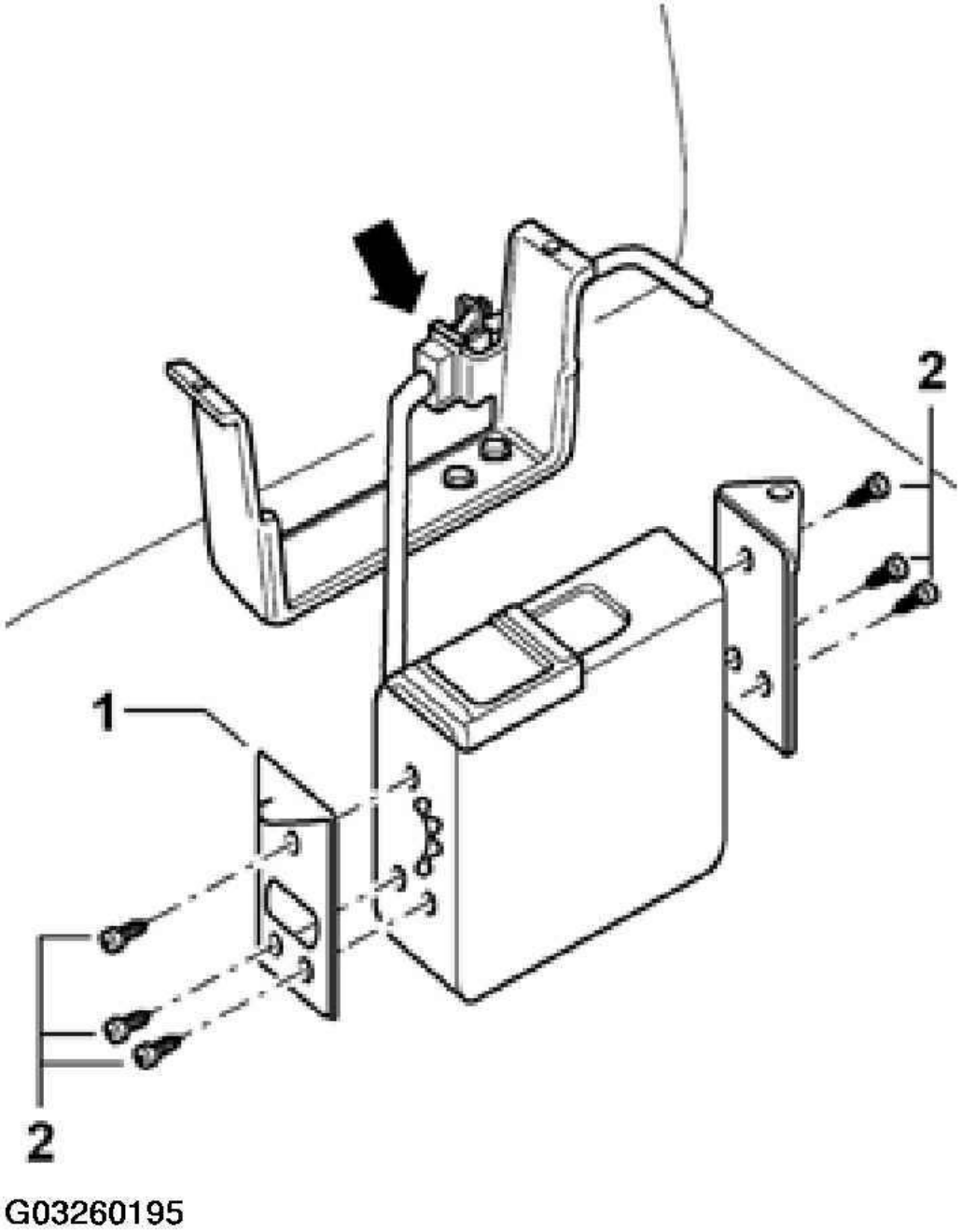
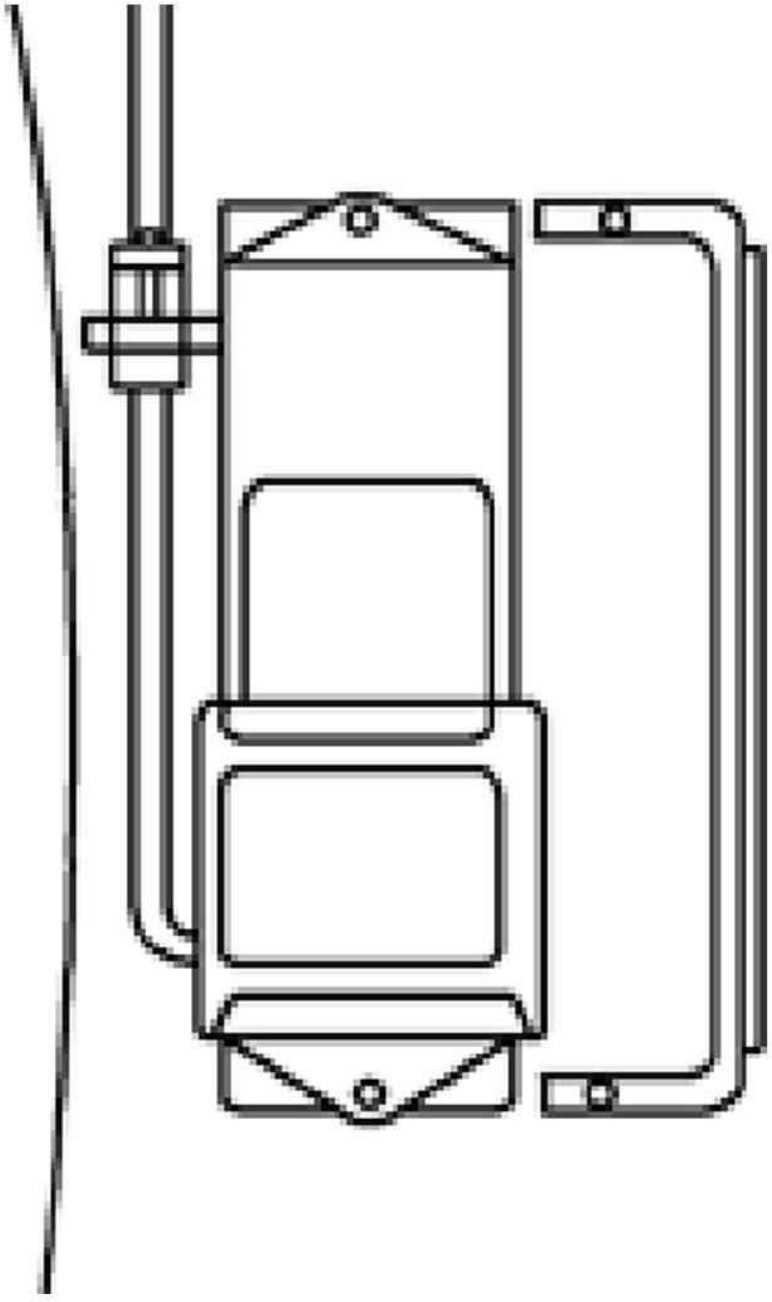


Fig. 9: Identifying Front Panel Adjustment
Courtesy of VOLKSWAGEN OF AMERICA, INC.

Panel adjustment rear:

b = 0...1 mm higher than roof level.

Arrow = direction of travel (forward).



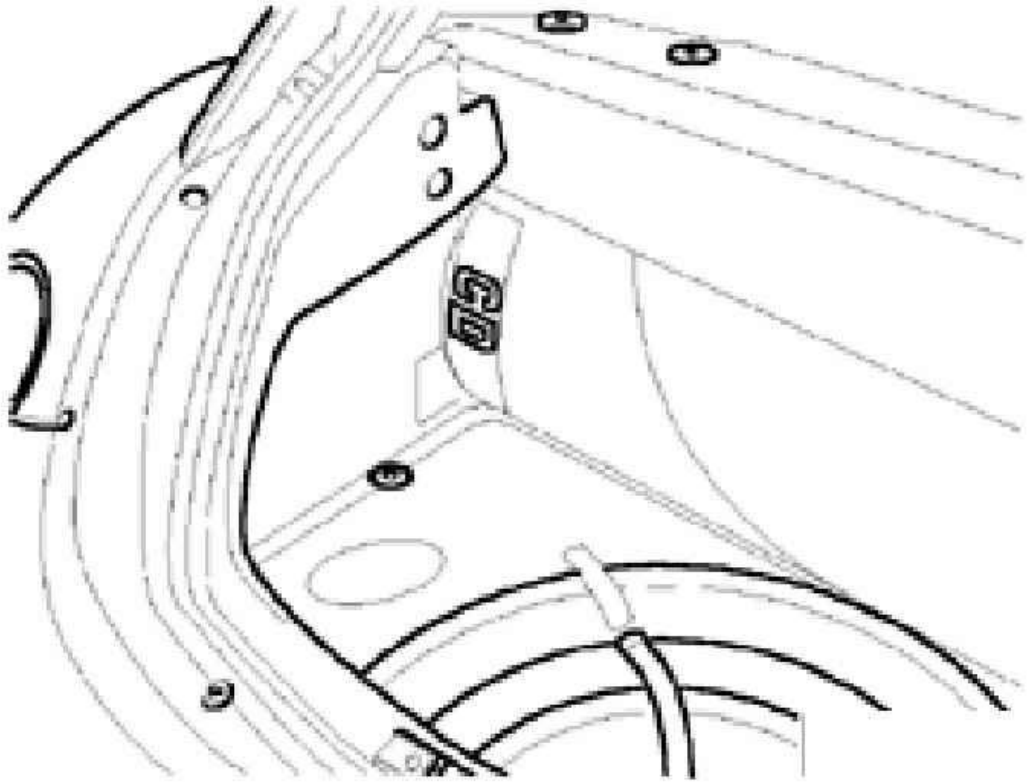
G03260196

Fig. 10: Identifying Rear Panel Adjustment
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Tighten screws for glass panel (4.5 N.m).

  Always tighten left and right-hand sides of glass panel symmetrically.

- Tilt (raise) sliding/tilting sunroof open.
- Hook in upper trim -1- at rear and clip front and center in.
- Hook in rear of lower trim -2- and clip front in.



G03260197

Fig. 11: Installing Hook In Upper Trim At Rear
Courtesy of VOLKSWAGEN OF AMERICA, INC.

PANEL SEAL, ADJUSTING

- Check that pre-tension between panel seal -2- and body is uniform all-round using an approx. 0,3 mm thick strip of paper (a visiting card for example). It must be possible to pull paper strip through between panel seal and body under tension.

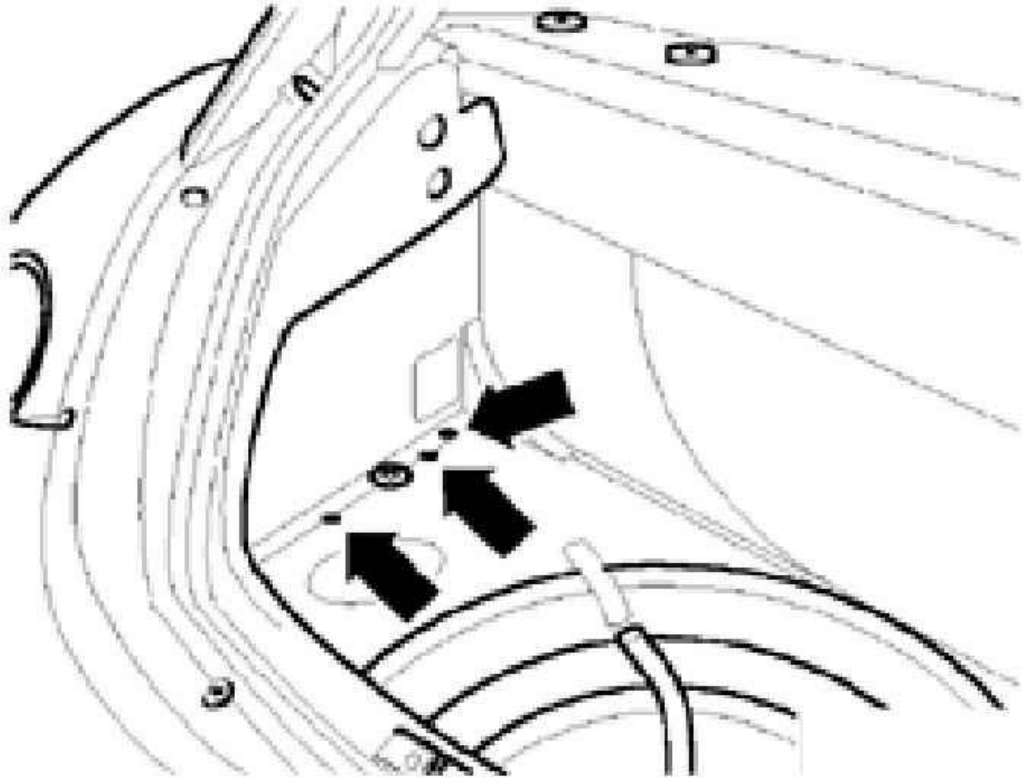


Fig. 12: Identifying Pre-Tension Between Panel Seal And Body
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- If panel seal is insufficient panel seal can be pushed apart with a wedge -1-, or if the pretension is excessive pushed together. To adjust the glass panel seal the glass panel -3- must be removed.

PANEL SEAL, REPLACING

- Remove sliding/tilting sunroof glass panel, see **SLIDING/TILTING SUNROOF GLASS PANEL, REMOVING** .
- Pull seal -1- off glass panel.

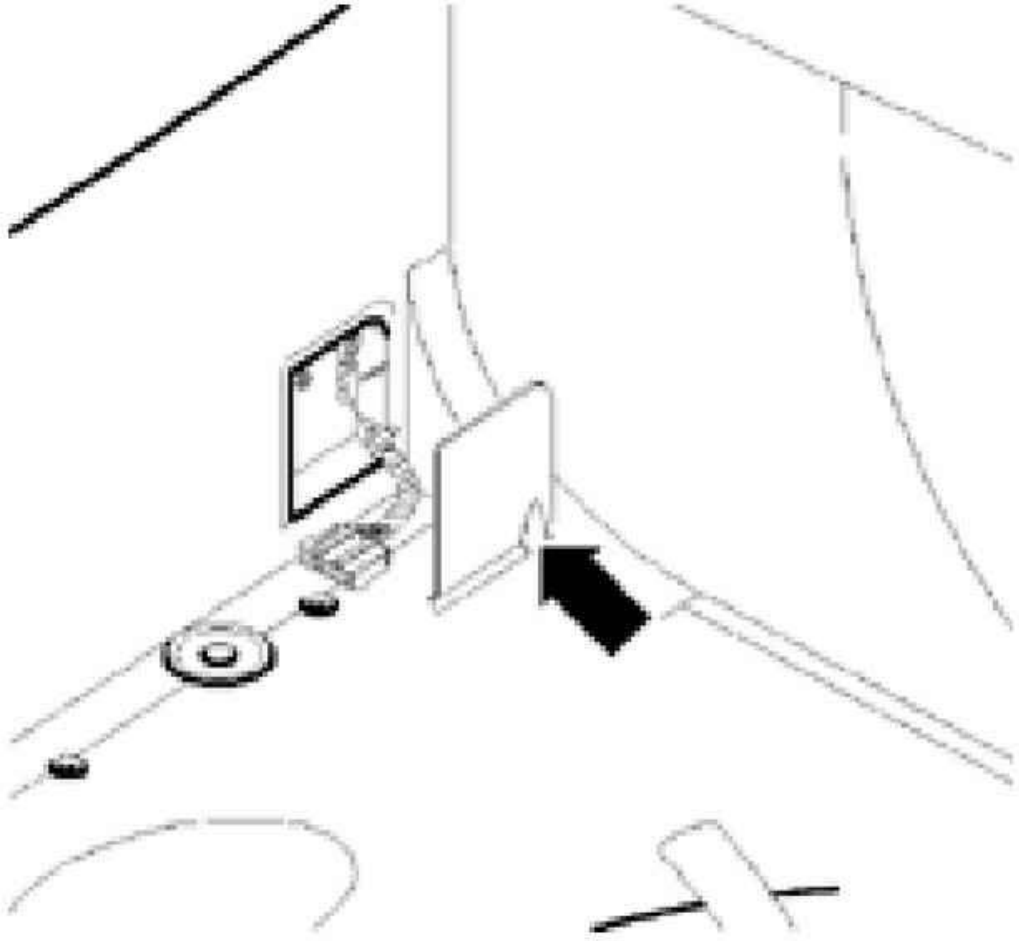


Fig. 13: Identifying Glass Panel Seal
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Pull new seal onto glass panel -2-, starting from center of panel rear working from bottom to top.

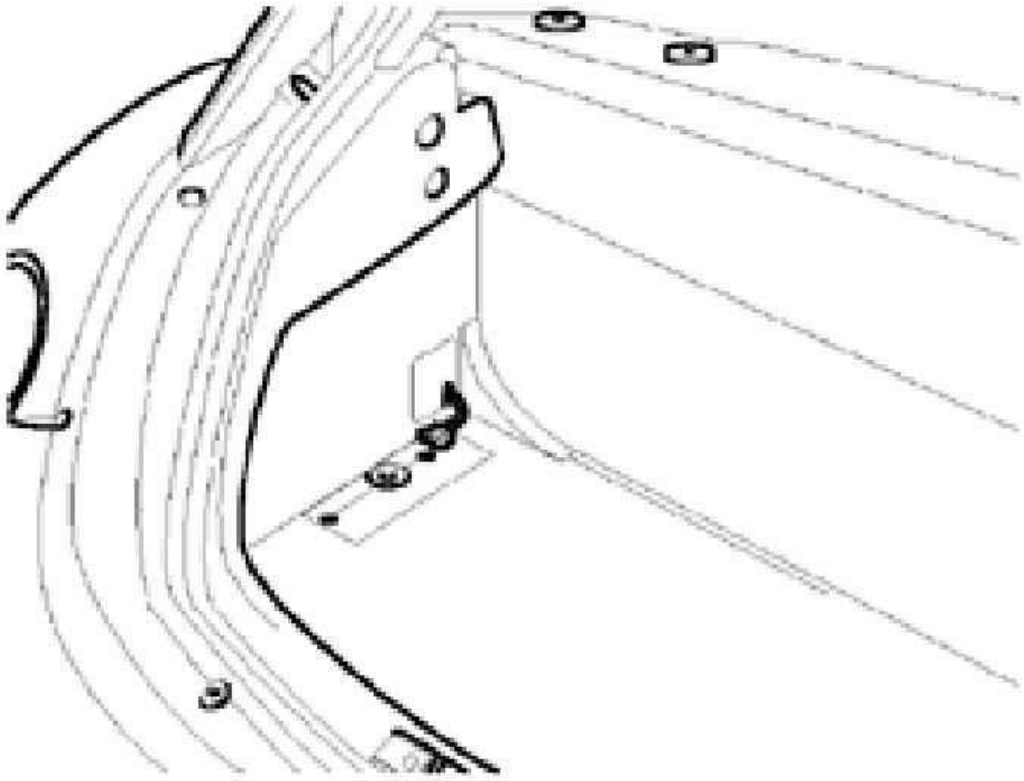


Fig. 14: Identifying Glass Panel Seal
Courtesy of VOLKSWAGEN OF AMERICA, INC.

NOTE: Moisten edge of panel with a soapy solution to ease installation of seal.

- Cut panel seal to length after installing.

WIND DEFLECTOR, REMOVING

- Sliding/tilting sunroof completely open.
- Install Special Hook 3370 between edge of roof and wind deflector mounting and release wind deflector mounting -1- from locking devices (left and right-hand sides) by pulling on Special Hook 3370.

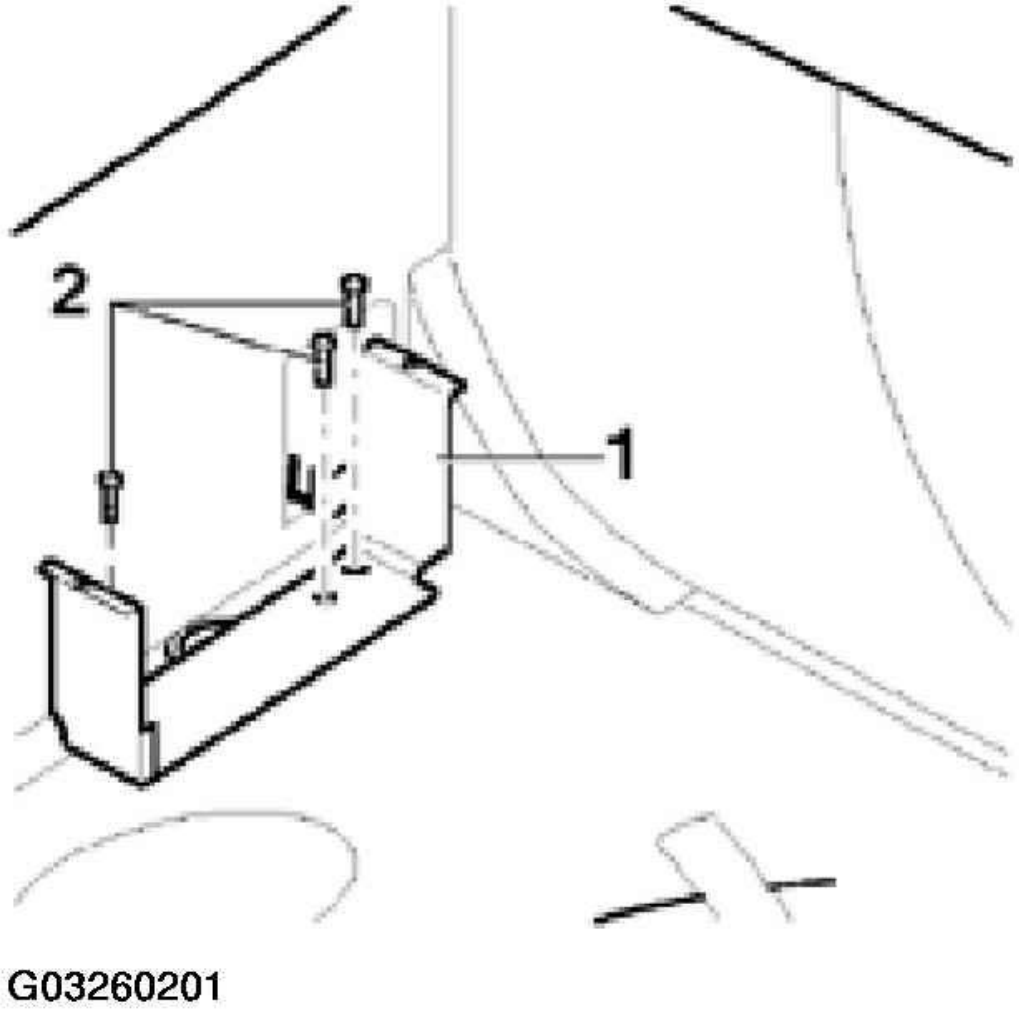


Fig. 15: Installing Special Hook 3370 Between Edge Of Roof And Wind Deflector Mounting
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Pry wind deflector mounting out of guide rail (left and right-hand sides) with a screwdriver.
- Remove wind deflector.

NOTE: When installing, make sure that wind deflector mounting locks in carrier unit in the prescribed position.

SUN BLIND, REMOVING

- Remove sliding/tilting sunroof glass panel, see **SLIDING/TILTING SUNROOF GLASS PANEL, REMOVING** .
- Slide sun blind to rear.
- Remove forward screws -arrow- on left and right-hand sides. Pull slide out forward over the limit stop -1- .

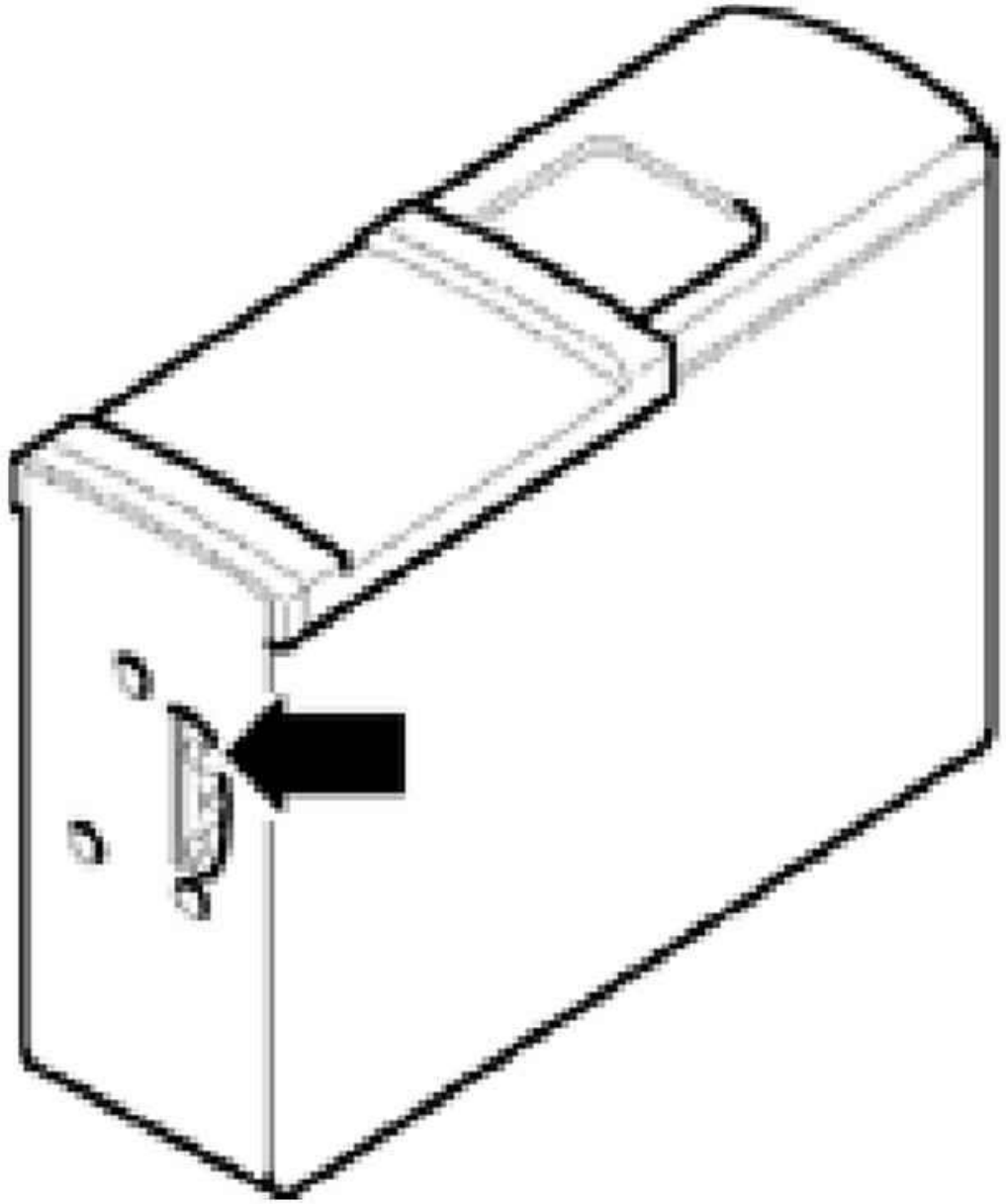


Fig. 16: Removing Forward Screws On Left And Right-Hand Sides
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Slide sun blind forward.

- Remove rearward screws -arrow- on left and right-hand sides. Pull slide out to rear and take out sun blind -1-.

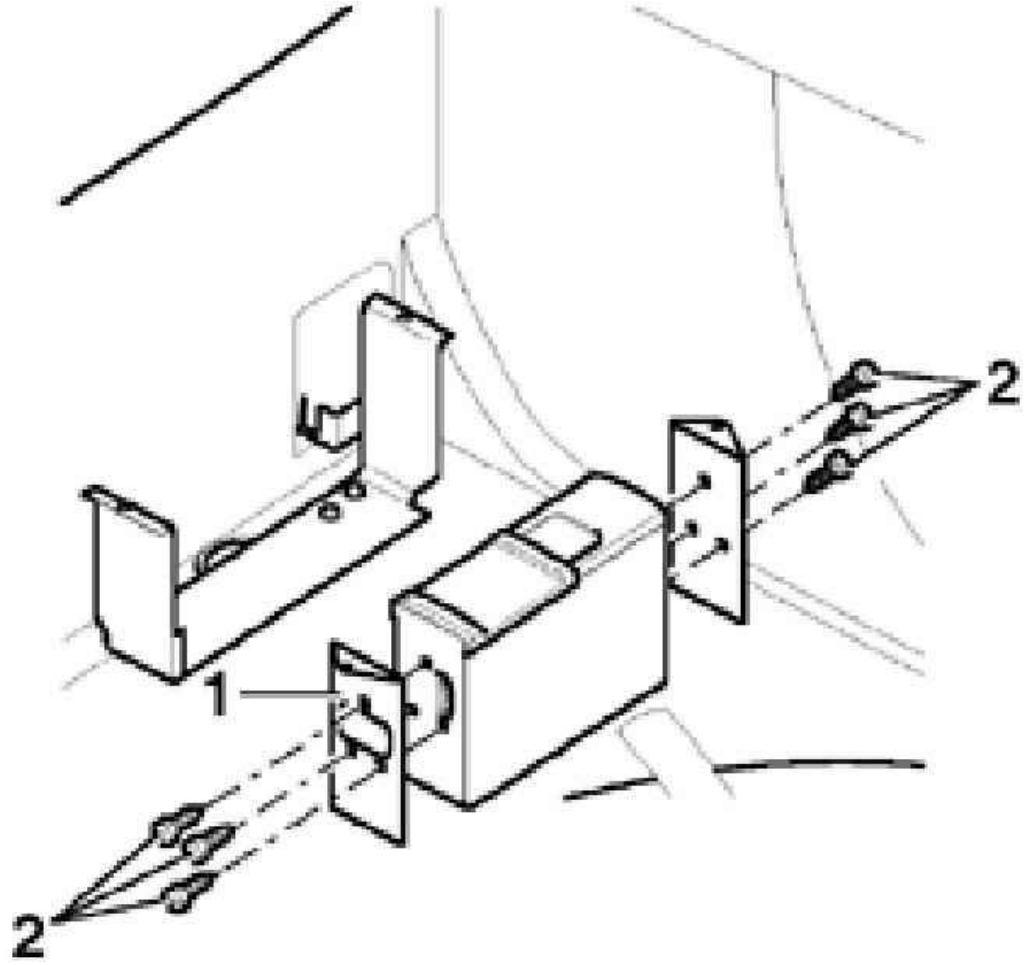


Fig. 17: Removing Rearward Screws On Left And Right-Hand Sides
Courtesy of VOLKSWAGEN OF AMERICA, INC.

DRIVE FOR SLIDING/TILTING SUNROOF, REMOVING

NOTE: Remove and install drive for sliding/tilting sunroof only when the roof is closed ("0"position).

- Disconnect battery Ground (GND) strap from battery.
- Unclip trim -1- in direction of arrow and remove.

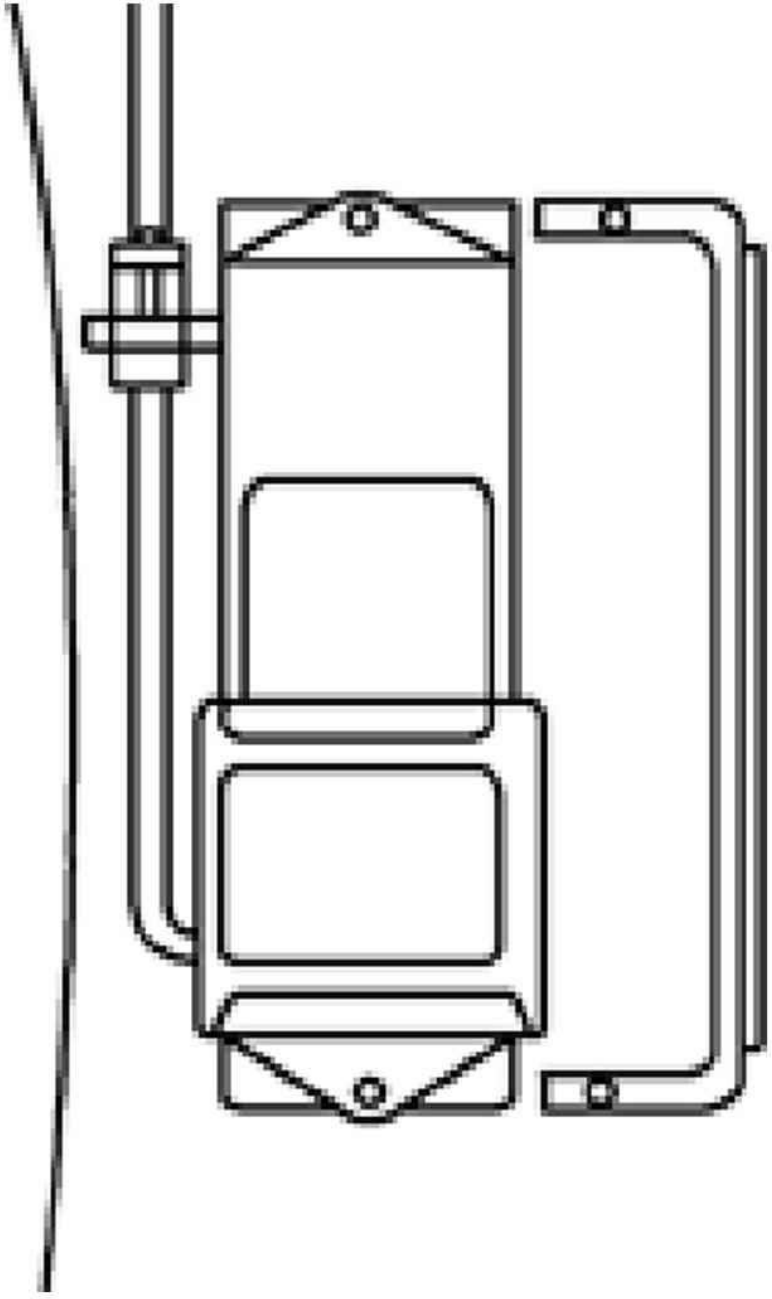
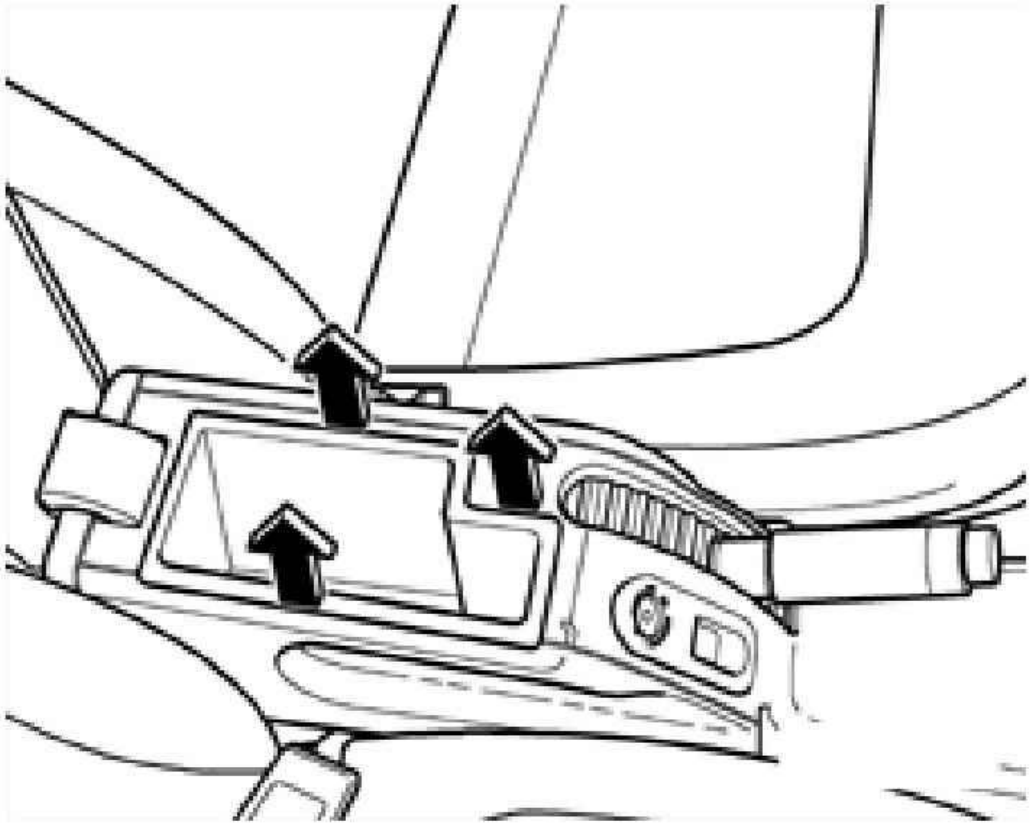


Fig. 18: Removing Trim Clip

Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Remove screws -1- and carefully unclip retaining frame locking lugs -arrows- of the automatic pre-selector.



G03260205

Fig. 19: Removing Retaining Frame Locking Lugs Of Automatic Pre-Selector
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Disconnect connection -arrow-.

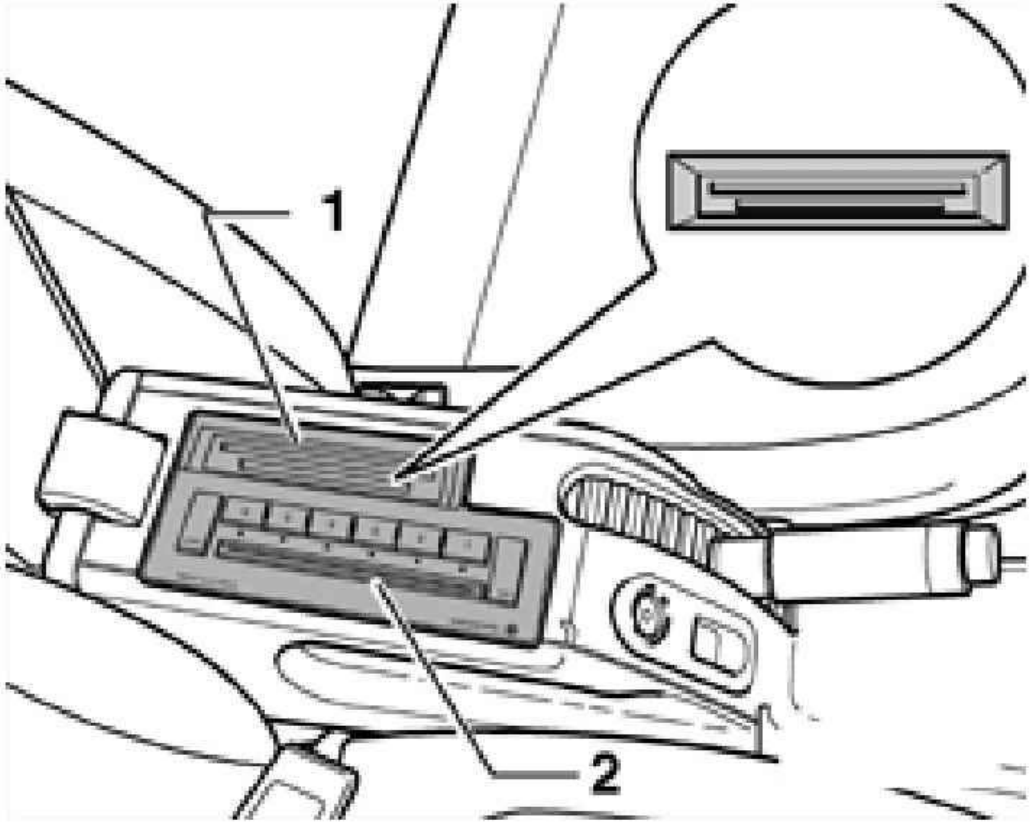


Fig. 20: Disconnecting Automatic Pre-Selector Connection
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Pull rear edge of trim -1- (with clock) downward off roof trim and unhook trim along forward edge.
- Disconnect connection -2- for interior light (and clock).

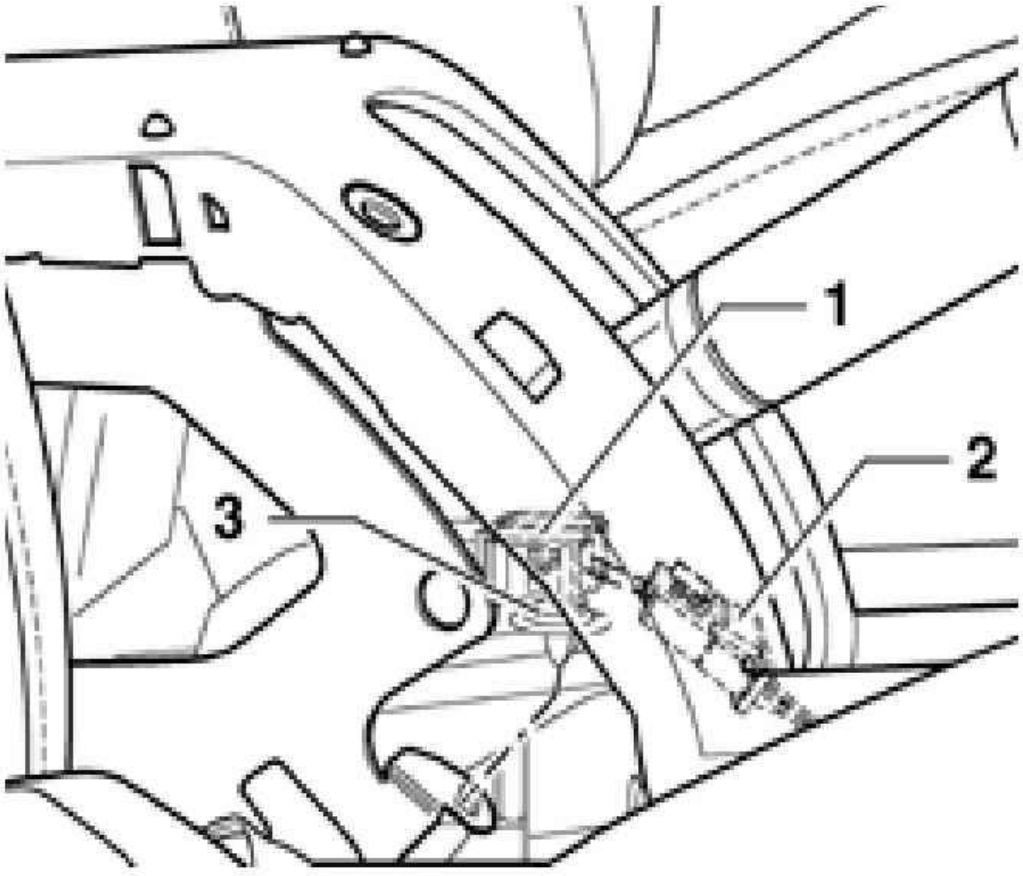


Fig. 21: Pulling Rear Edge Of Trim (With Clock) Downward Off Roof Trim
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Press interior mirror -1- downward at an angle -arrow- off the retaining plate (spring clip in mirror base).

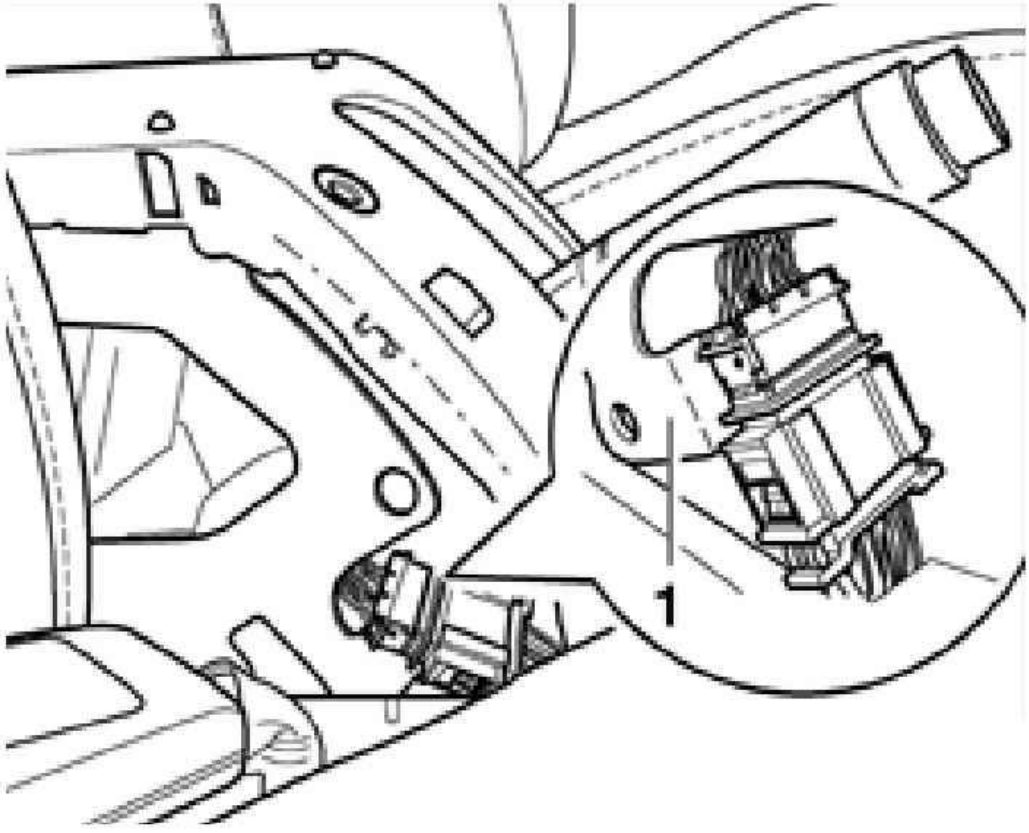


Fig. 22: Pressing Interior Mirror Downward At An Angle Off Retaining Plate
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Pry vanity light out using a screwdriver and disconnect connections.

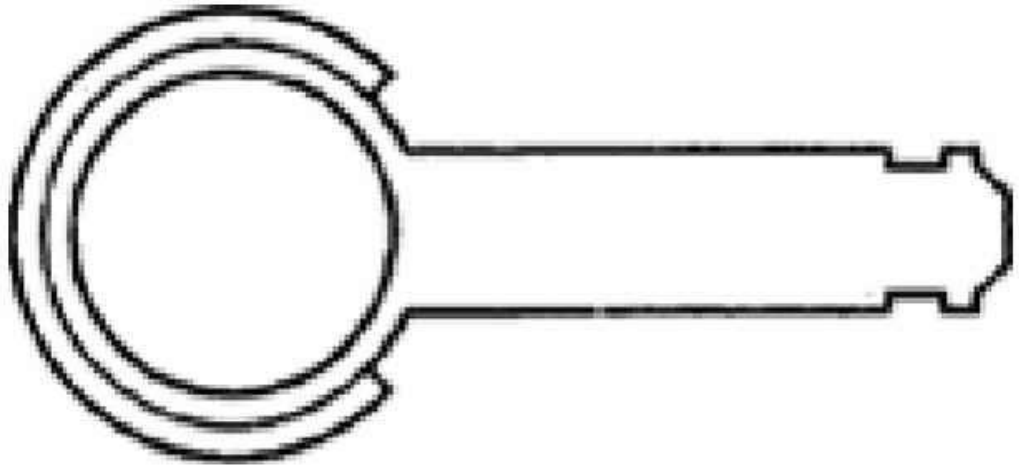


Fig. 23: Prying Vanity Light Out
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Unhook sun visor -1- from mounting -2-.
- Pry out cover caps -6-.
- Remove bolt/screw -5-.
- Release sun visor mounting -4- from mounting and separate connection -3-.
- Pry off cover caps -7-.
- Remove screws -8- and remove mounting -2-.
- Remove hand holds on left and right-hand sides of roof.

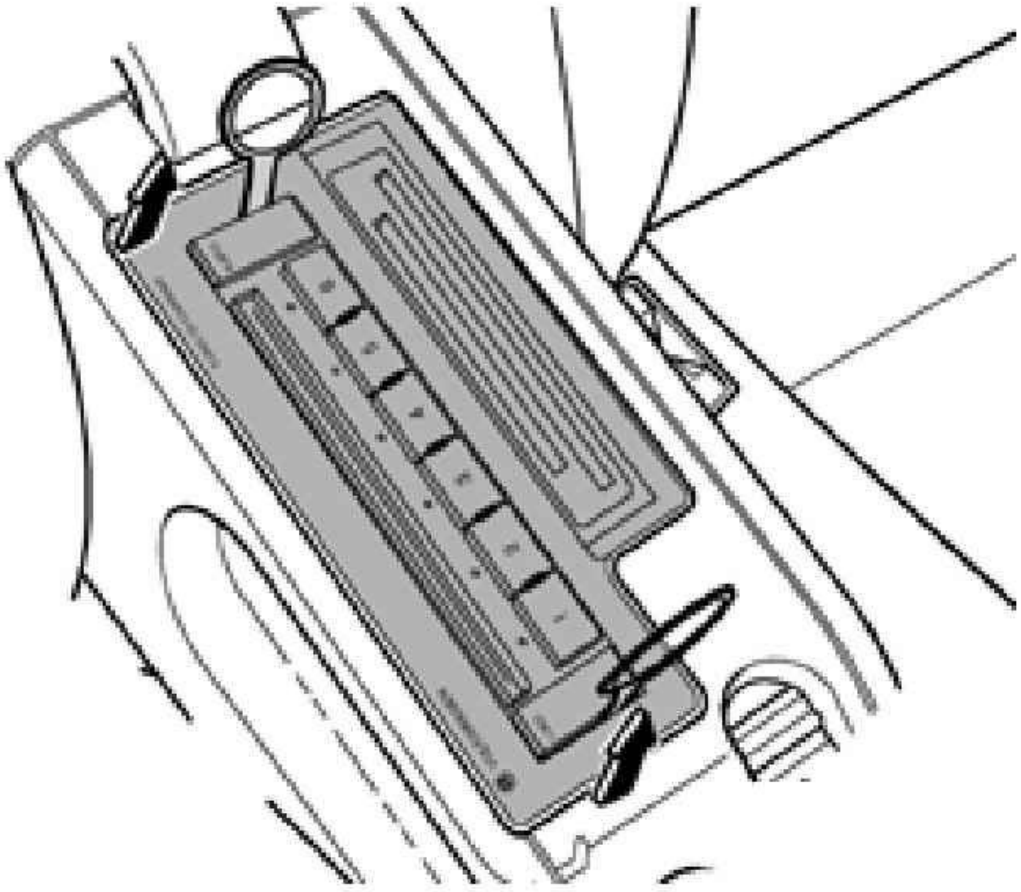
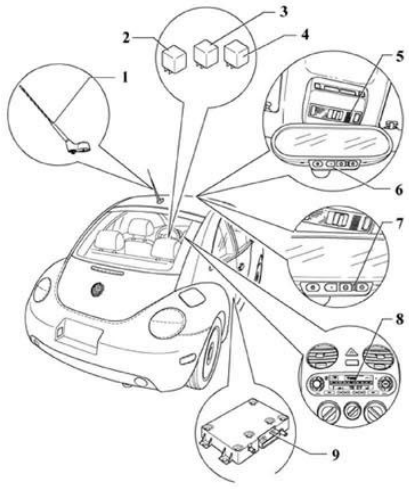


Fig. 24: Removing Sun Visor From Mounting
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Open hand hold -1- downward.
- Pry cover -2- upward using a screwdriver and fold open.
- Remove Phillips screws -3- and remove handle -1-.



1 - Antenna -R11-, Antenna Amplifier -R24- and Antenna for Navigation System (GPS) -R50-

- On roof, rear
- Removing and installing

2 - Dual Horn Auxiliary Relay -J733-

- On 13-position auxiliary relay panel, above relay panel.

3 - Auxiliary Emergency Flasher Relay -J517-

- On 13-position auxiliary relay panel, above relay panel.

4 - Warning Lamp Auxiliary Relay -J734-

- On 13-position auxiliary relay panel, above relay panel.

5 - Telephone Microphone -R38-

- Integrated with front interior light module.
- Removing and installing

6 - Telematic Control Head -E264-

- Integrated with rear view mirror.
- OnStar® buttons, description
- Includes telematics indicator lamp -7-.
- Removing and installing

7 - Telematics Indicator Lamp -K186-

- In Telematic Control Head.
- LED indicates telematic system operational status. Description
- Telematic system, troubleshooting using telematics indicator lamp

8 - Radio -R-

- In center console.

9 - Telematic Control Module -J499-

- Installed behind right rear side panel trim under rear speaker.
- Removing and installing
- Control module multi-pin connector terminal assignments

G03260211

Fig. 25: Opening Hand Hold Downward
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Remove trim from left and right-hand A-pillars.

See **A-PILLAR UPPER TRIM, REMOVING AND INSTALLING**

- Carefully unhook molded headliner at front of roof cut-out -arrows- and pull downward until screws for sliding/tilting sunroof can be accessed.

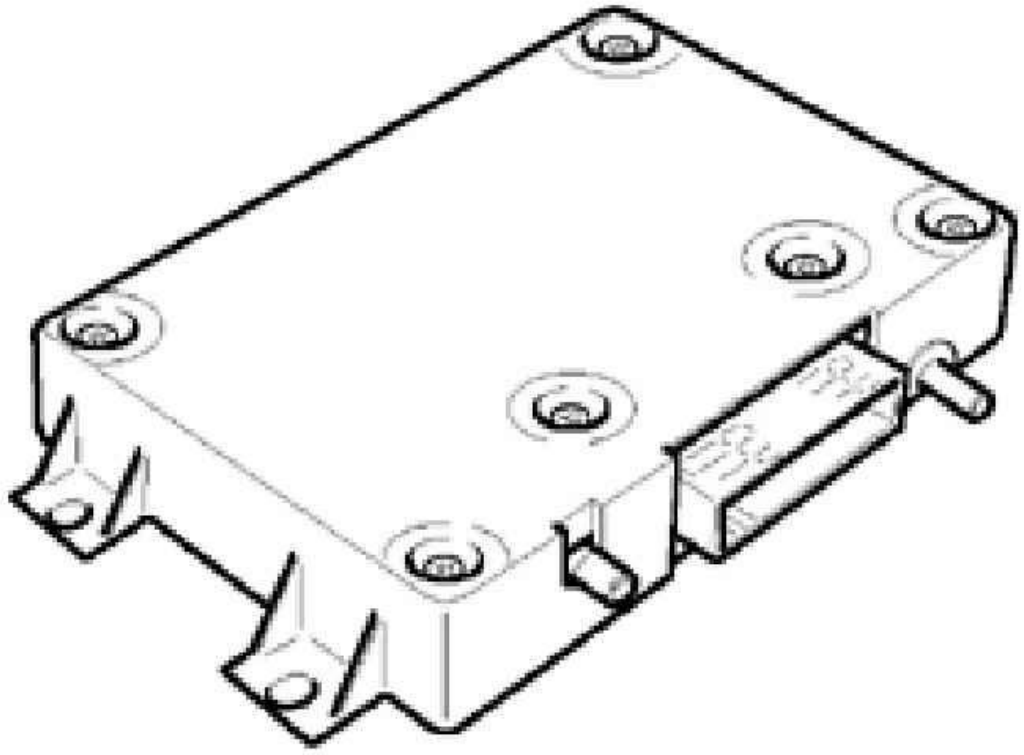


Fig. 26: Removing Molded Headliner From Front Of Roof Cut-Out
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Unclip and disconnect connection.
- Remove screws/bolts -arrows- and pull out drive for sliding/tilting sunroof.

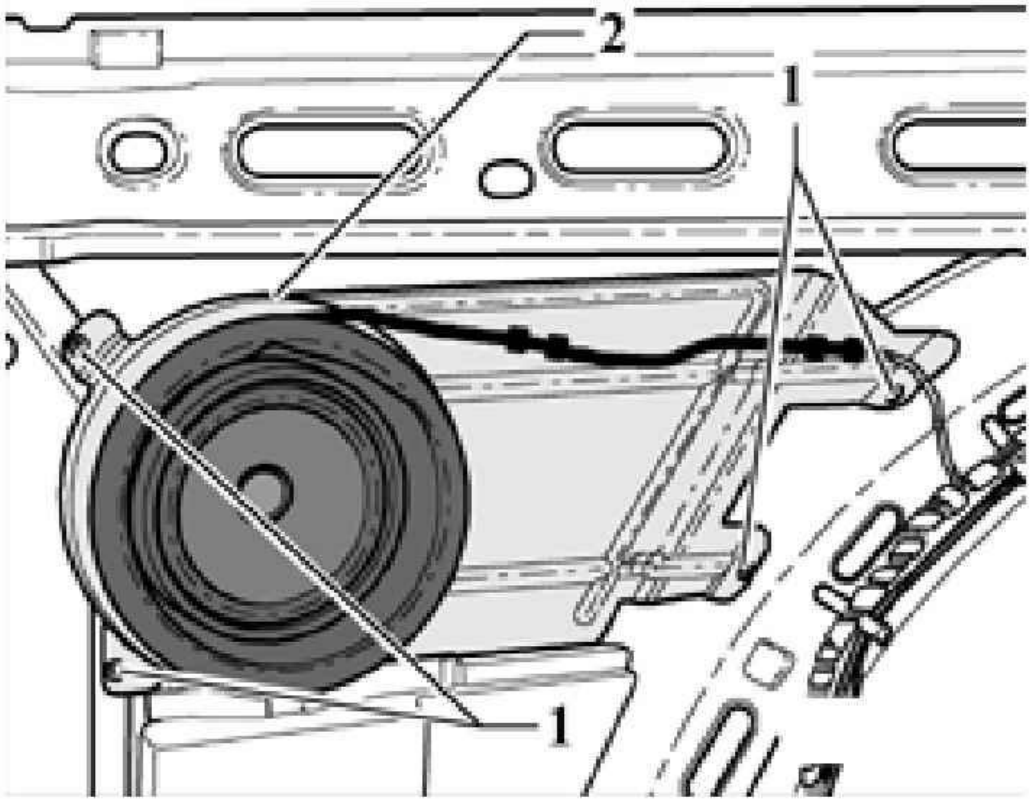


Fig. 27: Removing Sliding/Tilting Sunroof Drive Screws/Bolts
Courtesy of VOLKSWAGEN OF AMERICA, INC.

The bolts/screws for the drive are micro-encapsulated and must always be replaced (3.5 N.m).

DRIVE FOR SLIDING/TILTING SUNROOF ("0" POSITION), ADJUSTING

There may be a requirement to adjust the "0" position if drive was removed when not in "0" position or sliding/tilting sunroof was closed using emergency key.

Drive removed but still connected electrically.

- Select "tilt sunroof" (raise) with pre-selection control rotary switch.
- Select "close sunroof" with pre-selection control rotary switch.
- Select "open sunroof" with pre-selection control rotary switch.
- Select "close sunroof" with pre-selection control rotary switch.

- Install drive in this position ("0" position) with sliding/tilting sunroof closed.

REMOVING PRE-SELECTION CONTROL FOR SLIDING/TILTING SUNROOF

- Unclip trim -1- in direction of -arrow- and remove.

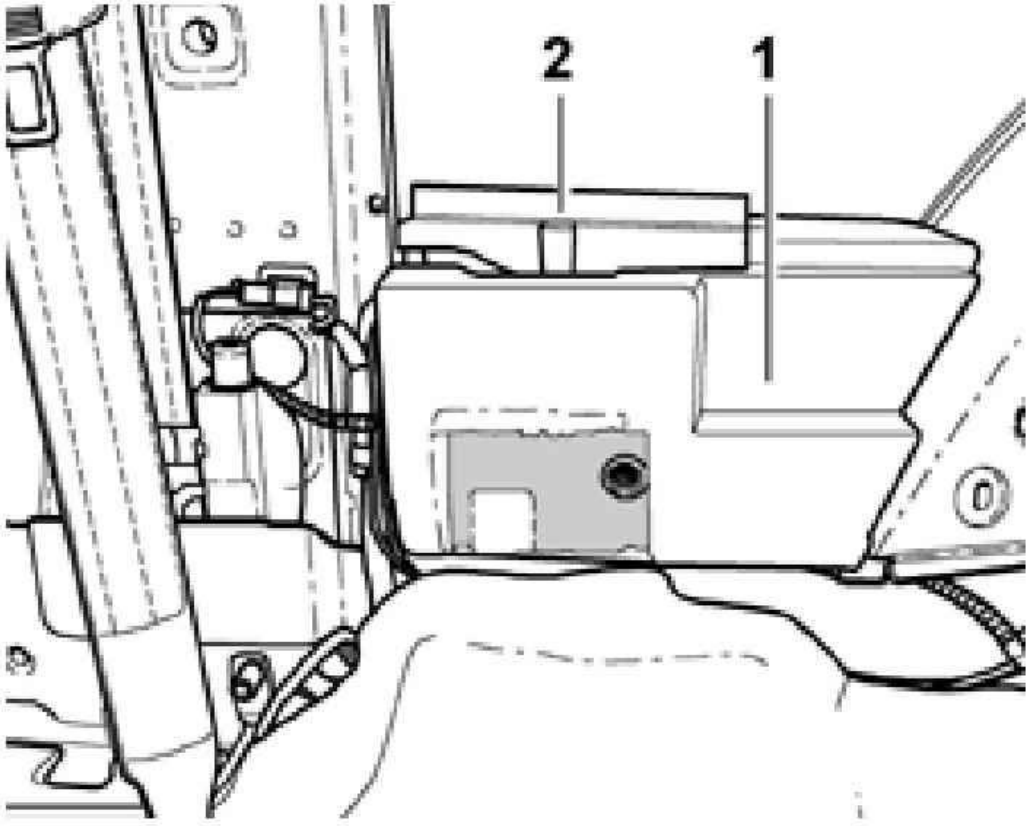


Fig. 28: Removing Trim Clip
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Remove screws -1- and carefully release frame locking lugs -arrows- of the automatic pre selector.

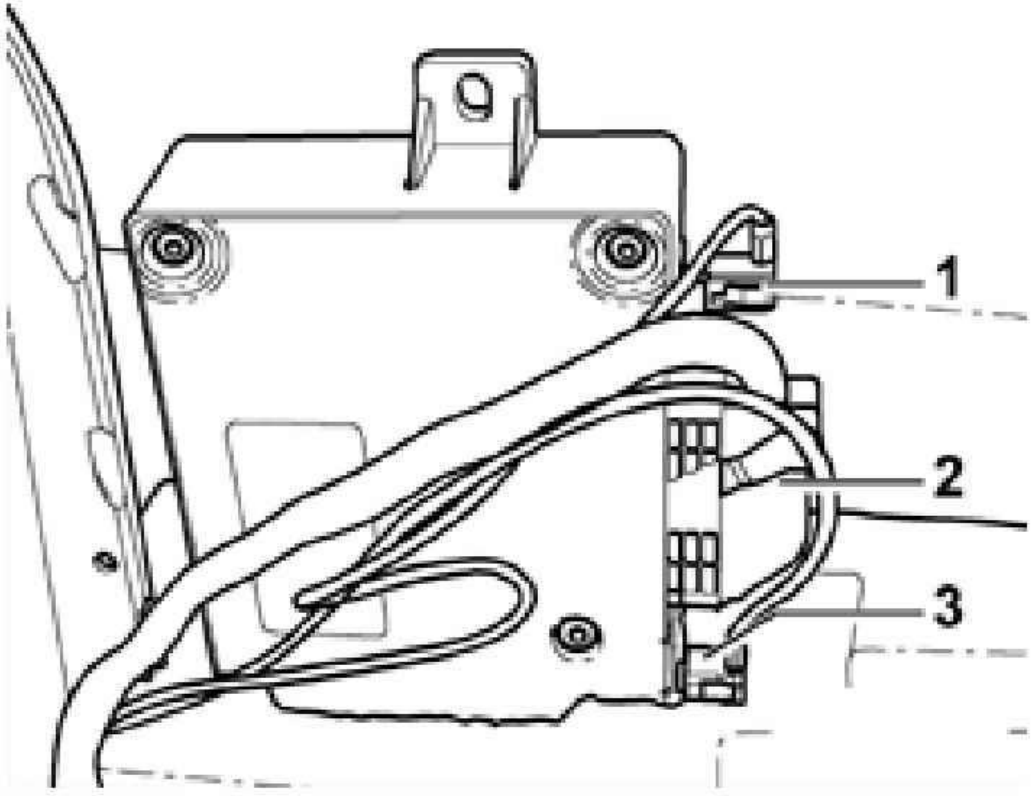


Fig. 29: Removing Frame Locking Lugs Of Automatic Pre Selector
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Disconnect connection.

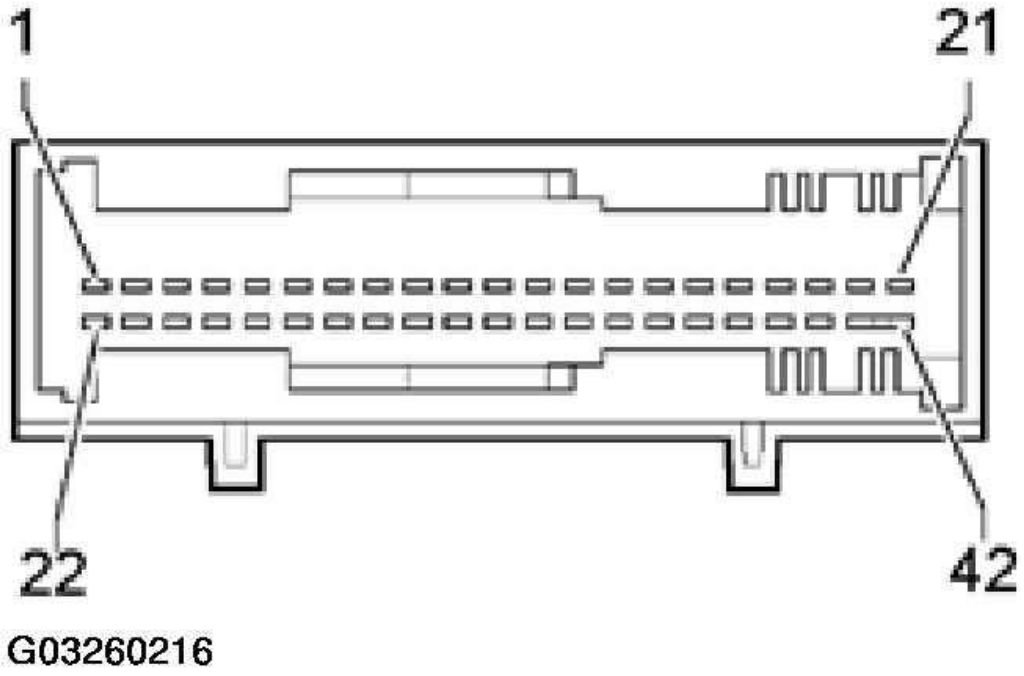


Fig. 30: Disconnecting Automatic Pre Selector Connection
Courtesy of VOLKSWAGEN OF AMERICA, INC.

PARALLEL RUNNING, CHECKING

- Remove sliding/tilting sunroof glass panel, see **SLIDING/TILTING SUNROOF GLASS PANEL, REMOVING** .

  Mark -arrow- on rear of guide upper part -1- must lie within marks -dimension a- on guide rail gate -2-, on both sides.

Fig. 31: Identifying Marks Dimension On Guide Rail Gate
Courtesy of VOLKSWAGEN OF AMERICA, INC.

Guide channel -2- must be located in guide rails (cannot be moved by hand).

PARALLEL RUNNING, ADJUSTING

NOTE: Parallel running adjustment can only be undertaken when drive and glass panel are removed (in "0" position).

- Remove drive for sliding/tilting sunroof, see **DRIVE FOR SLIDING/TILTING SUNROOF, REMOVING** .

  Mark -arrow- on the rear of guide upper part -1- must lie within marks -dimension a- on guide rail gate -2-, on both sides.

Fig. 32: Identifying Mark On Rear Of Guide Upper Part
Courtesy of VOLKSWAGEN OF AMERICA, INC.

Guide channel -2- must be located in guide rails (cannot be moved by hand).

- Slide guide upper part -1- (from front to rear only) centrally between marks.
- Install drive in this position ("0" position).

Then check "0" position.

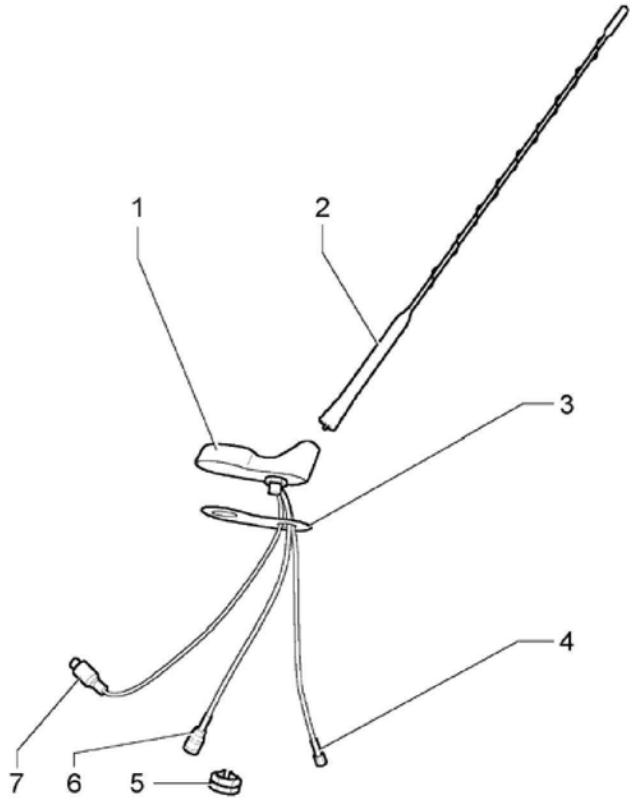
CARRIER UNIT, REMOVING AND INSTALLING

Removing

- Remove pre-selector control for sliding/tilting sunroof, see **REMOVING PRE-SELECTION CONTROL FOR SLIDING/TILTING SUNROOF** .
- Remove molded headliner.

  See **ROOF TRIM** .

- Pull water drain hoses -arrows- off carrier unit -1-
- Remove bolts/screws -2- and -4- (with sleeves) and lift carrier unit out of vehicle with help of a second technician.



1 - Antenna base

2 - Antenna mast

3 - Gasket

4 - Antenna connection
- Navigation (GPS)

- Threaded

5 - Hex nut

6 - Antenna connection
- Radio

- Plug
- Black

7 - Antenna connection
- Telematics

- Plug
- Grey

G03260219

Fig. 33: Removing Carrier Unit
Courtesy of VOLKSWAGEN OF AMERICA, INC.

Installing

- Insert carrier unit -1-, align with bolt/screw holes and insert bolts/screws -2- and -4- (with sleeves).
- Check routing of wiring and connections for electrical devices on roof and reinstate if necessary.
- Tighten carrier unit -1- starting at drive -3- for sliding/tilting sunroof on left and right-hand sides moving rearward (8 N.m).
- Install water drain hoses -arrows-.
- Install connection for drive -3-.

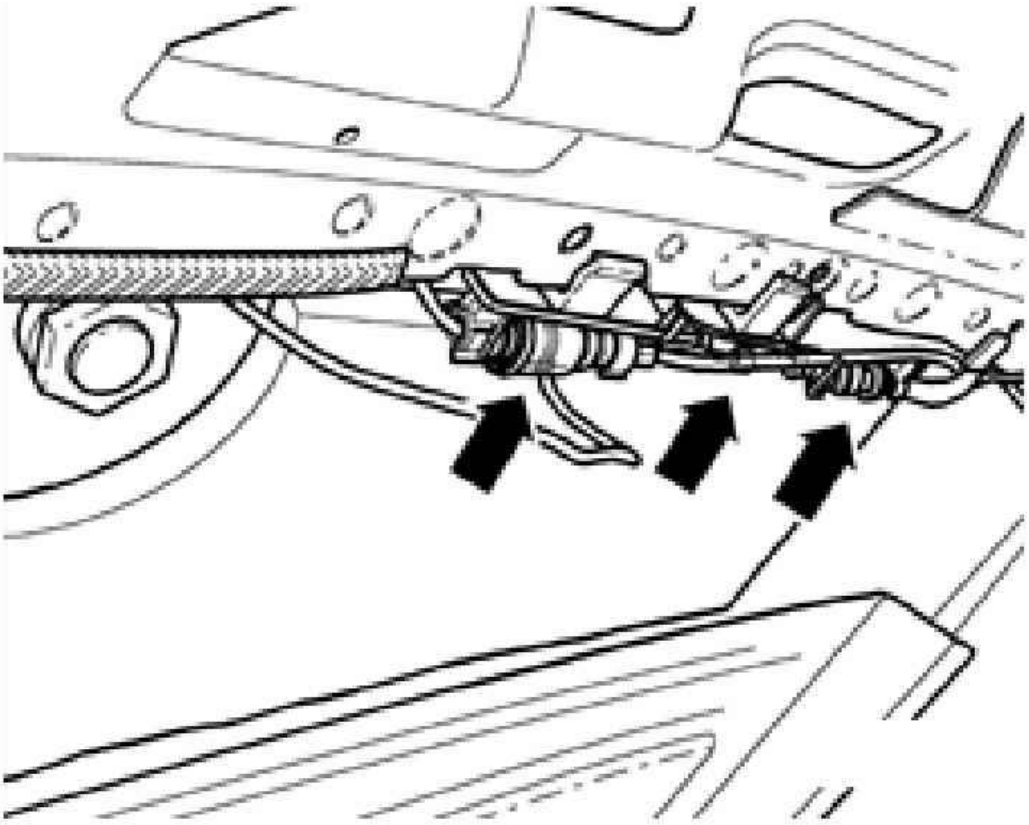


Fig. 34: Installing Carrier Unit
Courtesy of VOLKSWAGEN OF AMERICA, INC.

GUIDE CHANNEL, REMOVING

- Remove sliding/tilting sunroof glass panel, see **SLIDING/TILTING SUNROOF GLASS PANEL, REMOVING** .
- Remove carrier unit, see **CARRIER UNIT, REMOVING AND INSTALLING** .

- Remove drive for sliding/tilting sunroof, see **DRIVE FOR SLIDING/TILTING SUNROOF, REMOVING** .
- Unclip end piece -1- -arrow- from guide rail -2- and then pull off.

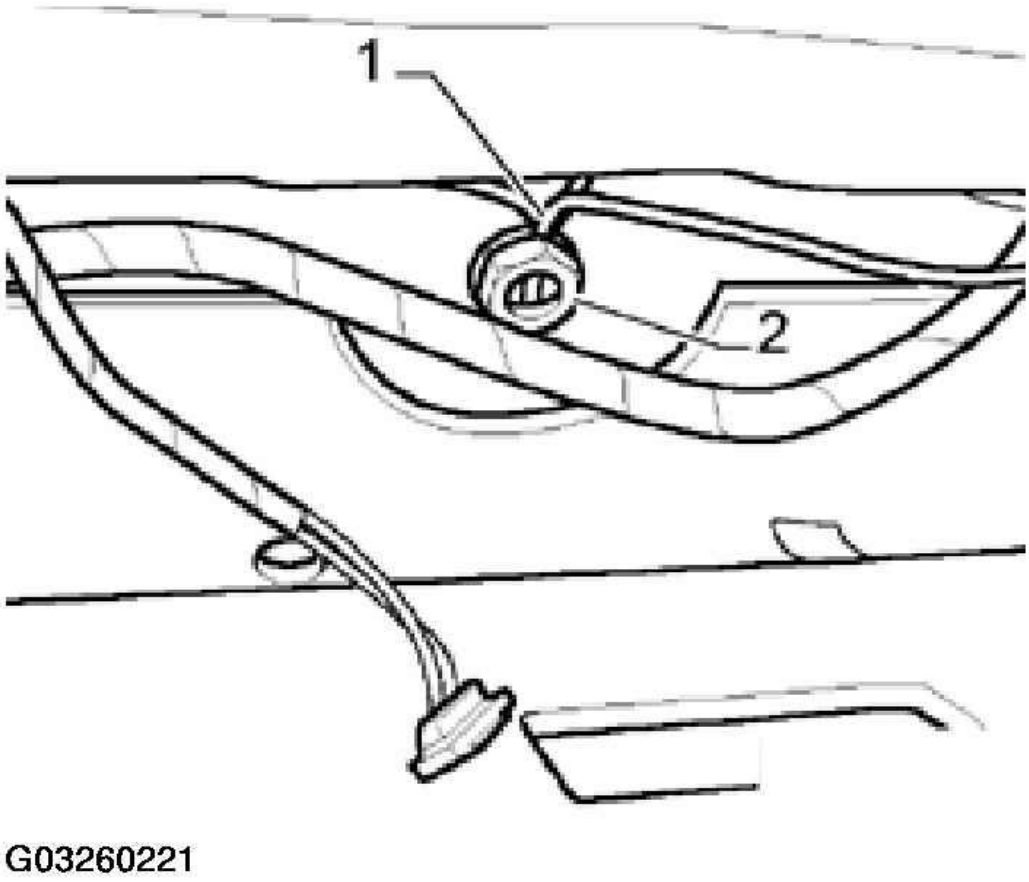


Fig. 35: Removing End Piece Clip From Guide Rail
Courtesy of VOLKSWAGEN OF AMERICA, INC.

NOTE: When installing end piece -1- guide rail seal with Butyl adhesive sealing cord AKL 450 005 05.

- Carefully unclip water channel -1- from mounting on guide locking lug guide -2- on both sides with a screwdriver.

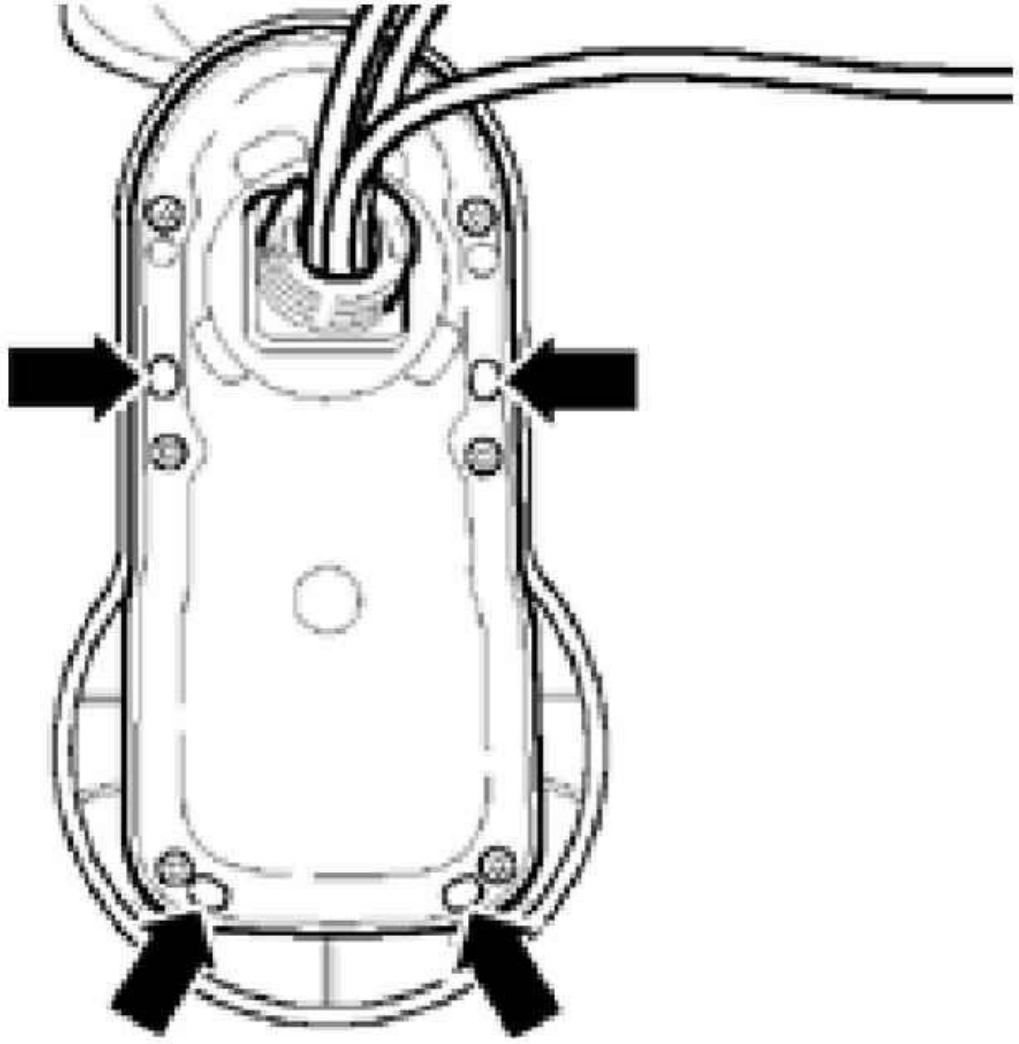


Fig. 36: Removing Water Channel Clip From Mounting On Guide
Courtesy of VOLKSWAGEN OF AMERICA, INC.

- Slide rear guide -1- in guide rail -4- in direction of -arrow- until the locking lug guide -3- is released.
- Pull rear guide -1-, locking lug guide -3- and guide channel -2- together out from guide rails -4-.

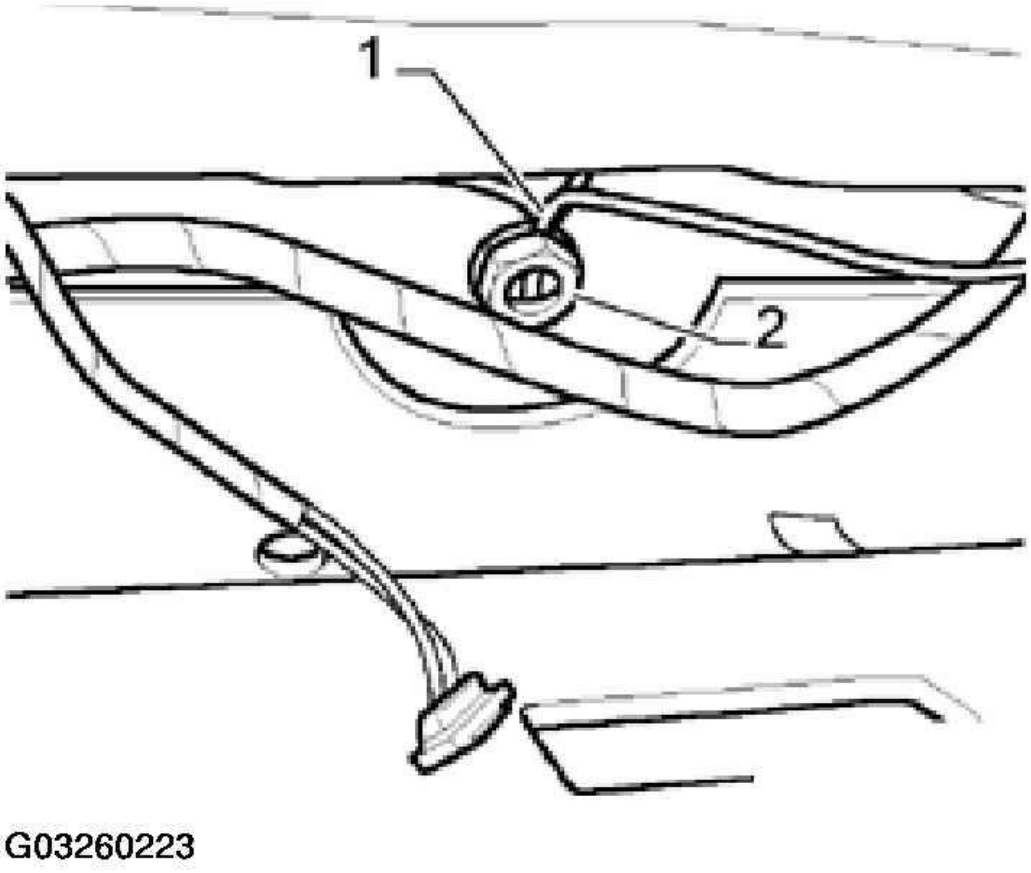


Fig. 37: Sliding Rear Guide In Guide Rail
Courtesy of VOLKSWAGEN OF AMERICA, INC.

NOTE: Always replace guide with cable as a pair.

WATER DRAIN HOSES, CLEANING

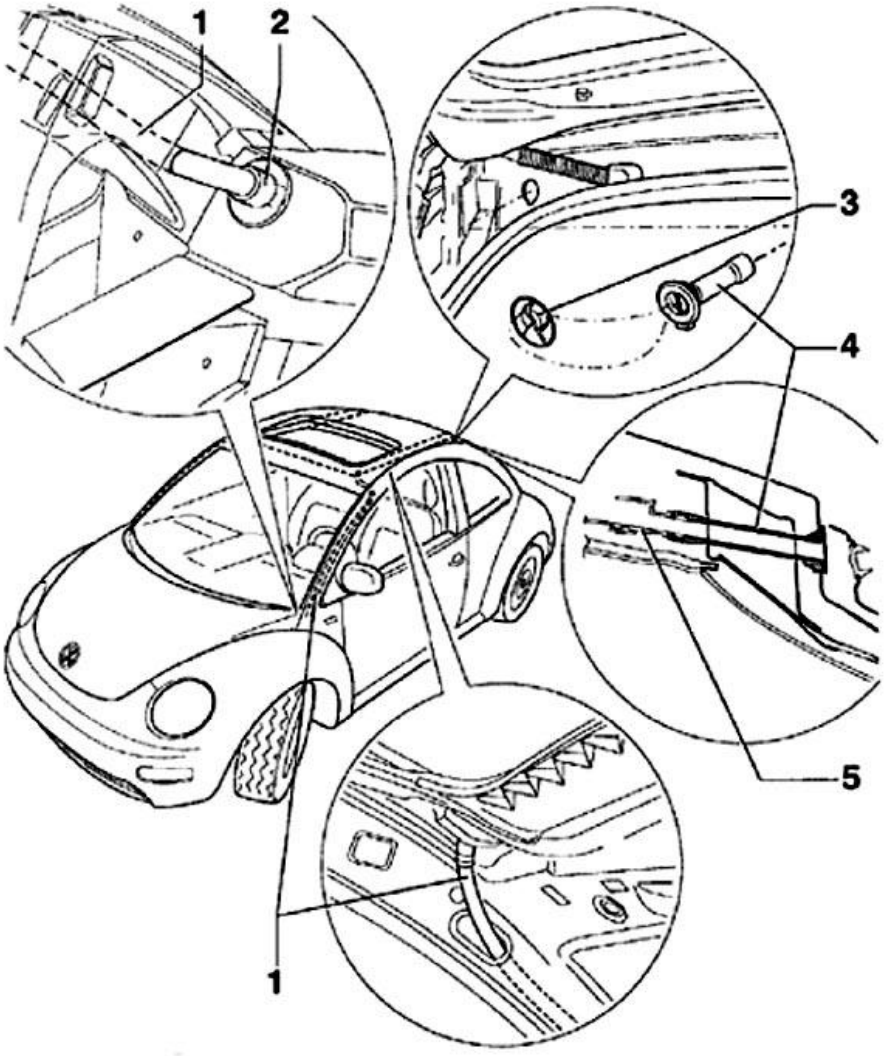
Front & rear water drain hoses:

Front water drain hoses:

The front water drain hoses -1- run in the A-pillars and end with a water drain valve -2- in the plenum chamber. Clean from sliding/tilting sunroof aperture.

1. Front water drain hoses.
2. Front water drain valve.

NOTE: **It is recommended that a probe is used for the cleaning process (locally manufactured from a piece of speedometer cable approx. 1500 mm (60 in.) long).**



1 - Front water drain hoses.

2 - Front water drain valve.

3 - Cover.

4 - Water drain hose with valve.

5 - Carrier unit.

G03259215

Fig. 38: Identifying Water Drain Hoses
Courtesy of VOLKSWAGEN OF AMERICA, INC.

Rear water drain hoses:

The rear water drain valves -4- are installed directly onto the sliding/tilting sunroof water drains and exits under the tailgate in the roof channel. The cleaning can be performed from the rear end by removing cover -3-.

3. Cover.
4. Water drain hose with valve.
5. Carrier unit.

NOTE: It is recommended that a probe is used for cleaning process (locally manufactured from a piece of speedometer cable or similar).